

# JVC

## SERVICE MANUAL

MODEL

**RC-828L/LB**

FM-LW-MW-SW1-SW2-SW3

6-BAND

BIPHONIC STEREO

RADIO CASSETTE

RECORDER



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## Specifications

**DIMENSIONS:** 47.0cm(W) x 27.3cm(H) x 12.7cm(D)  
18-1/2" x 10-3/4" x 5"

**WEIGHT :** Approx. 6.4 kg (with batteries)  
14.1 lbs.

### TUNER SECTION

Frequency Ranges : FM 88~ 108MHz  
LW 150~ 350kHz  
MW 540~1600kHz  
SW1 2.3~ 6MHz  
SW2 5.95~ 6.2MHz  
SW3 6~ 18MHz

### RECORDER SECTION

Tape Speed : 4.75cm/s (1-7/8 ips)  
Track System : 4-track 2-channel stereo  
Recording System : AC Bias  
Erasing System : AC Erasing  
Fast Forward Time : Within 110 sec. (C-60 cassette)  
Rewinding Time : Within 110 sec. (C-60 cassette)  
Wow & Flutter : 0.09% (WRMS)

### AMPLIFIER SECTION

Speakers : 16cm (6-1/2") x 2, 5cm (2") x 2  
Power Output : Max. 8W (4W + 4W) (DC)  
Input Jacks : MIC x 2, DIN  
Output Jacks : Ext. Speaker x 2 (6Ω)  
Headphones (8Ω)

**POWER CONSUMPTION :** 19W

### SEMICONDUCTORS

ICs : 6  
Transistors : 32  
Diodes : 15

### POWER SOURCE

DC : 12V, 8 "R20" cells or equivalent  
AC : 110/220/240V 50/60Hz



# Technical Information

## BIPHONIC SYSTEM

The BIPHONIC system is the new method of acoustical reproduction developed by JVC.

The BIPHONIC means that the BINAURAL program is reproduced stereophonically through the speaker systems.

### 1. BINAURAL SYSTEM

The BINAURAL system is to reproduce programs recorded by two microphones which are located at the both ear positions of artificial head acoustically simulates a human head. The direction and distance of sound sources can be distinguished when listening to the binaural recorded programs through headphones. The human distinguishes the direction and distance of sound sources by level difference and time lag of sounds which propagate to both ears.

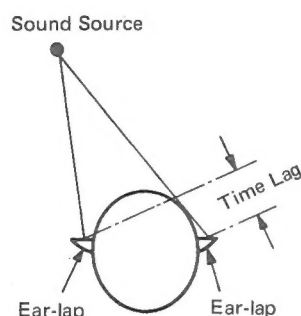


Fig. 1

The most important thing is that the binaural programs should be reproduced through the headphones, that is, the left channel sounds should be heard by left ear and right sound by right ear.

### 2. BIPHONIC PROCESSOR

The newly developed BIPHONIC system can reproduce the binaural programs through the speaker systems.

There exists unwanted signals, when reproducing the binaural programs through the speaker systems, crosstalk  $b$  and reflected signal  $c$  as shown in Fig. 2.

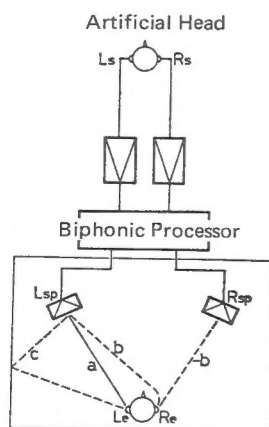


Fig. 2

To improve the binaural effect the crosstalk should be acoustically cancelled and the reflected signals should be decreased.

To decrease the reflected signals, set the speaker systems in a dead room or change the location of speaker systems.

To cancel the crosstalk  $b$ , the signal  $-b$  which is the same level as the crosstalk  $b$  at the position of right ear and is the reverse phase should be emitted from the right speaker. The new circuitry "BIPHONIC PROCESSOR" has been developed by JVC to cancel the crosstalk and to reproduce the binaural programs through the speaker systems.

The model RC-828 is equipped with the IC (Integrated Circuit) of BIPHONIC PROCESSOR.

The block diagram of BIPHONIC PROCESSOR is shown in Fig. 3.

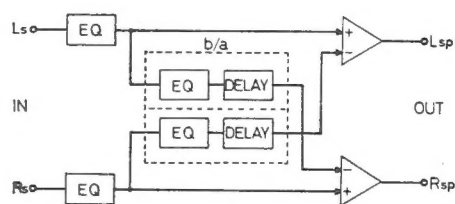


Fig. 3

Part of signals are added to the opposite channel through the equalizer and delay circuit to cancel the crosstalk. As the level and phase of crosstalk is varied by distance from the speaker, the listening position at where the binaural effect is normally obtained is limited.

The optimum listening position of model RC-828 is set between 60 to 80cm from the speakers.

### 3. EXPANDED PLAYBACK

The BIPHONIC system can expand the sound field of 2-channel stereophonic programs.

Generally, in the 2-channel stereo systems, the sound field exists between left and right speaker systems.

The sound field expands to the outside area of speaker systems when the 2-channel stereo programs are reproduced through the BIPHONIC PROCESSOR.

This effect is named "EXPANDED PLAYBACK".

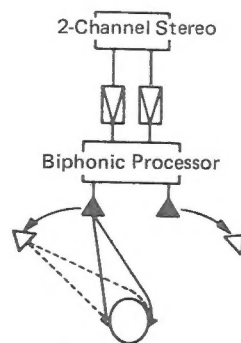


Fig. 4

The BIPHONIC PROCESSOR also widens the sound field of 2-channel stereo programs in listening through the headphones, this is named "STEREO WIDE PLAYBACK".

## FULL AUTO STOP MECHANISM

The model RC-828 is equipped with the full automatic stop mechanism which functions in any mode, playback, recording, fast forwarding (F.F.) and rewinding, when the tape has stopped.

The motor is turned on when the control button has been pressed. The motor rotation is transmitted to the worm gear through the driving belt, the driving pulley and the worm wheel. Those parts are included inside the shut-off assembly.

The gear is always turning while the motor is rotating. In the playback, recording, and F.F. mode, the take-up disk is turning to the (A) direction as shown in Fig. 5 and the rotation is transmitted to the detection pulley by way of the detection belt. The detection cam that is swung to the (A) direction as shown in Fig. 7 by the friction of the felt which is contacted with the detection pulley pushes the release lever outward. In the rewinding mode, the take-up disk turns to the (B) direction as shown in Fig. 5. The detection cam swings to the (B) direction as shown in Fig. 8 and the release lever is pressed outward. The release lever does not engage with the pin which is projected from the worm gear, while the tape is running, so that the auto stop mechanism does not function.

If the PAUSE button is pressed, the stop lever as shown in Fig. 5 pushes the release lever not to engage with the pin. When the tape stops, in any mode, the release lever moves to the (C) direction as shown in Fig. 10. The projection (D) of release lever engages with the pin and the release lever is moved to the (E) direction. The release lever pushes the kick lever and the kick lever presses the push button cam to release the lock of buttons so that the mechanism becomes stop mode.

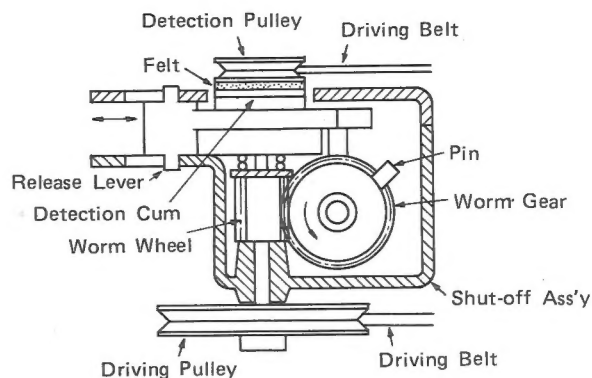


Fig. 6

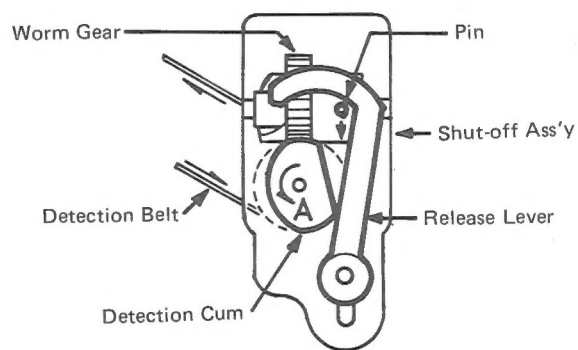


Fig. 7

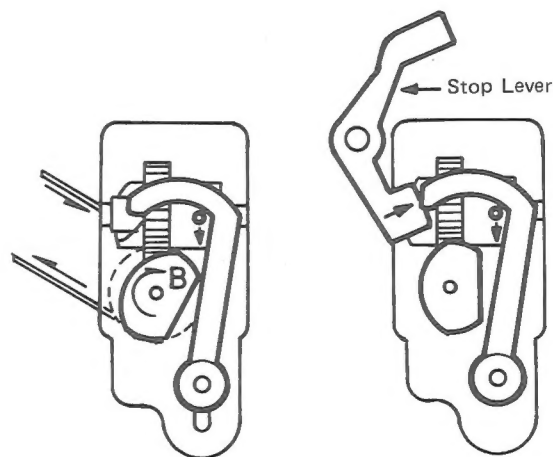


Fig. 8

Fig. 9

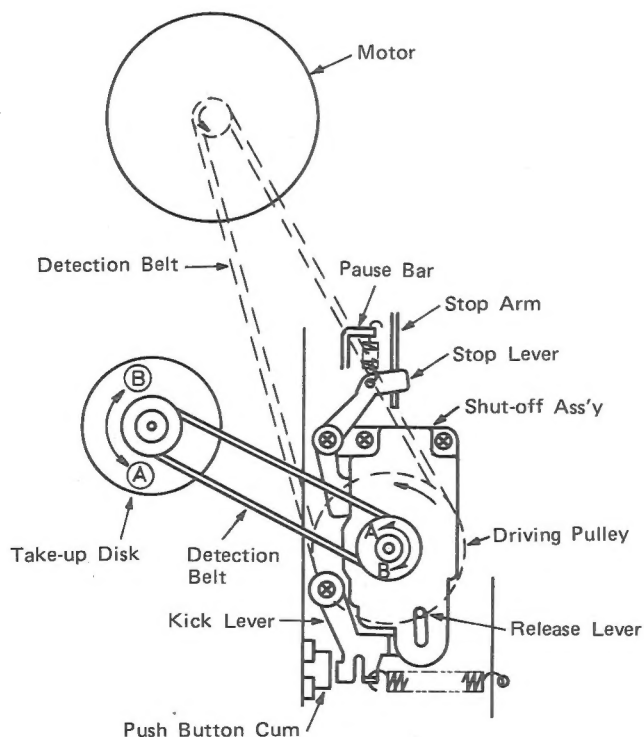


Fig. 5

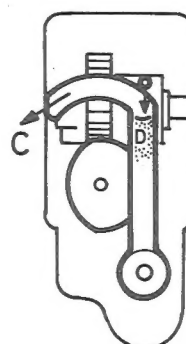


Fig. 10

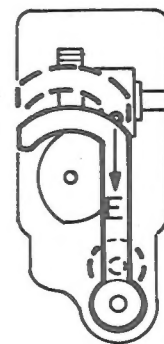


Fig. 11



# Main Parts Location

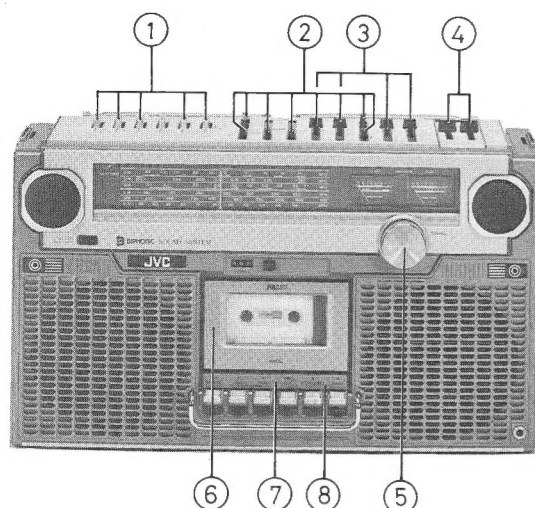


Fig. 12

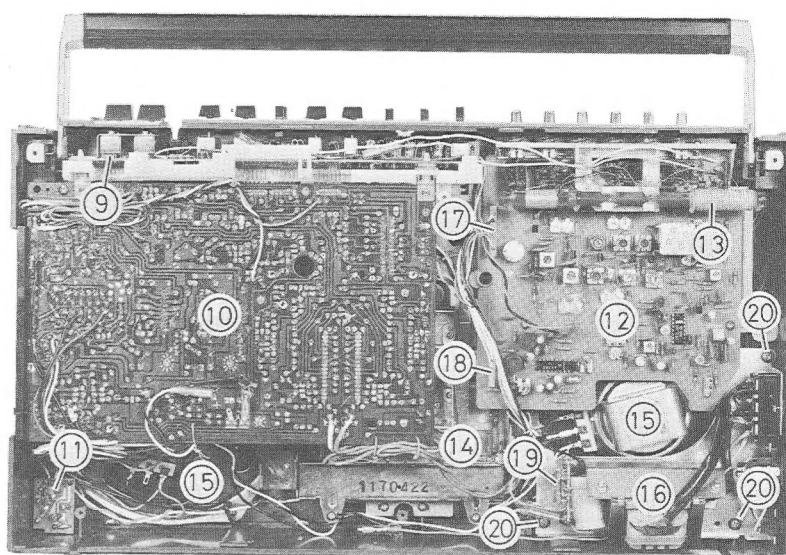


Fig. 13

Ref. No.	Parts No.	Parts Name	Description	Q'ty
1	*V44980-001	Push Button	BAND Select	6
2	*V44979-001	Lever Cap	FUNCTION, MODE, TAPE, REC	6
3	*V44976-001	Slide Knob	REC LEVEL, TONE	4
4	*V44973-001	"	VOLUME	2
5	*VXL4015-001	Knob	Tuning	1
6	*ZERC828-CCA	Cassette Door Ass'y		1
	*V31145-00A	Cassette Door Sub Ass'y		1
	*V31146-001	Plate	Glued on Door	1
7	*V44932-001	Head Cover	Plastic	1
8	*V44955-001	Plate	Glued on Head Cover	1
9	*	Circuit Board Ass'y	Control	1
10	*	"	Amplifier	1
11	*	"	Headphone	1
12	*	"	Tuner	1
13	*VQB016B-204	Bar Antenna Ass'y	L8, 9	1
14	*	Cassette Mechanism		1
15	EAS16P111SD	Speaker	Woofer 16cm (6½") 6Ω	2
16	*	Power Supply Ass'y		1
17	QMC0559-001	Socket Ass'y	5-pin	1
18	QMC0359-001	"	3-pin	1
19	QMF51A2-1R0	Fuse	1AT	1
20	SBSB4012Z	Screw		3

Note: 1. Asterisked parts (\*) show "NEW PARTS". Other parts are all "CURRENT PARTS"; therefore, check your inventory and order situation before placing new order to avoid making extra stock.

2. The circuit board assemblies, power supply assembly and whole assembly of cassette mechanism in this model will not be available as spare parts.

# Disassembly & Replacement

## Rear Cabinet (Refer to Fig.14)

1. Remove 7 screws.
2. Disconnect 4 connectors.

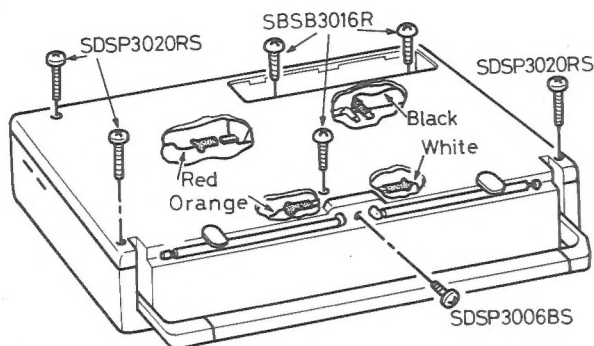


Fig. 14

## Tuner Section (Refer to Fig.15)

1. Turn the tuning knob fully counterclockwise.
2. Disconnect 3-pin plug, 5-pin plug, red wire, and black wire.
3. Remove 4 screws.

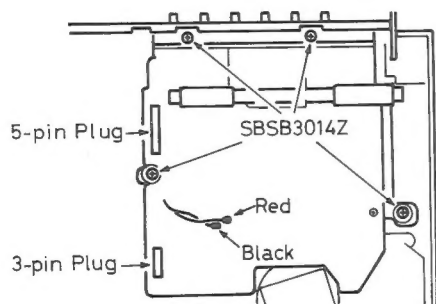


Fig. 15

## Cassette Mechanism Section (Refer to Fig. 16)

1. Pull up the plastic rivet on the cassette door.
2. Take off 6 slide knobs: REC LEVEL, TONE and VOLUME controls.
3. Remove 7 screws.

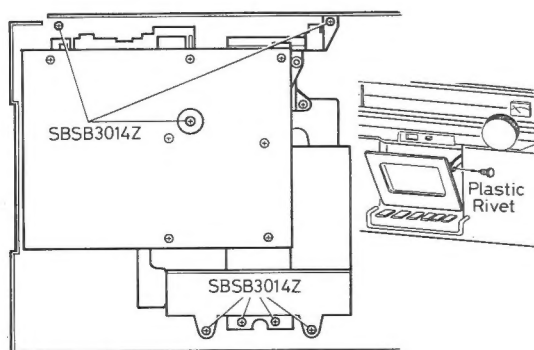


Fig. 16

## Amplifier Circuit Board (Refer to Fig.17)

1. Remove 7 screws.
2. Loosen 3 wire clamps.
3. The circuit board can be turned over to the top.

**Note:** The connecting lever of FUNCTION switch may be put out from the slider of switch, when turning over the circuit board. Check the connecting lever, when mounting the circuit board.

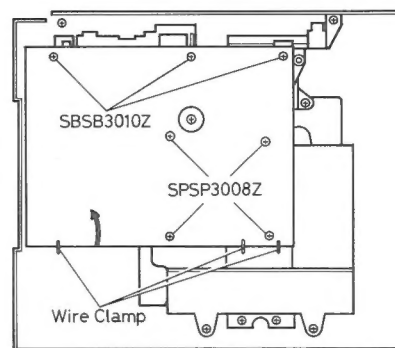


Fig. 17

## Amplifier Section with control circuit (Refer to Fig.18)

1. Remove 6 slide knobs.
2. Remove 7 screws.

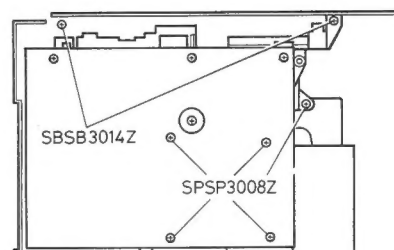


Fig. 18

## Control Circuit Board (Refer to Fig.19)

1. Take out the amplifier section.
2. Press 4 projections of chassis to release the circuit board, and then the circuit board can be turned over.

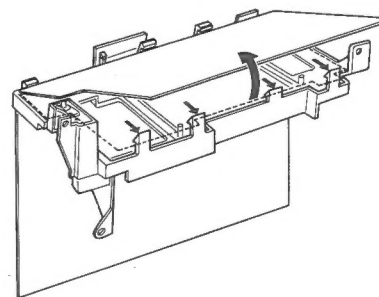


Fig. 19



**Head Cover (Refer to Fig.20)**

1. Depress the CUE-button.
2. Draw the head cover with a finger by inserting the finger into the slot between the head cover and the CUE-button.

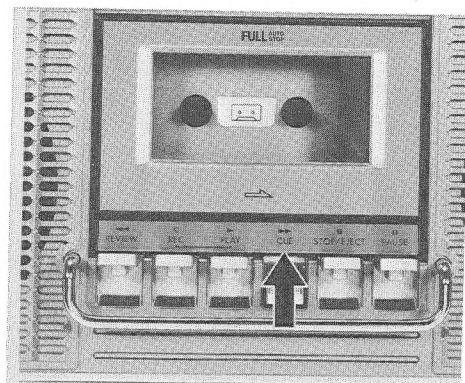


Fig. 20

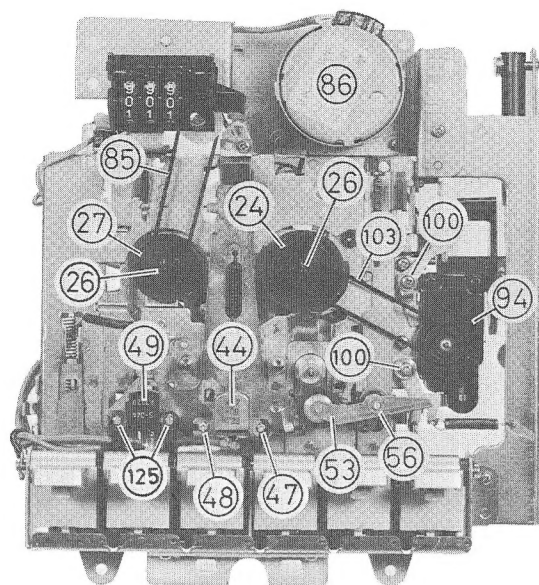


Fig. 21

**Parts of Cassette Mechanism**

**Note:** Reference numbers of Figs. 21 to 23 are the same as on Fig. 55.

**A. Erase Head (49) (Refer to Fig. 21)**

Remove 2 screws (125).

**B. Play/Record Head (44) (Refer to Fig. 21)**

Remove 2 screws (47) & (48).

**Note:** When replacing the head, it is permitted to solder the signal wires directly to the head terminals though the small printed circuit boards is soldered to the terminals.

**C. Pinch Roller Arm Ass'y (53) (Refer to Fig. 21)**

Remove the E-ring (56).

**D. Take-up (24) & Supply (27) Disks (Refer to Fig. 21)**

1. Detouch the belt (103) or (85)
2. Remove the reel stopper (26).

**E. Shut-off Ass'y (94) (Refer to Figs. 21 & 22)**

1. Detouch 2 belts (103) & (102).
2. Remove 2 screws (100).

**F. Motor (86) (Refer to Figs. 21 & 23)**

Remove 3 screws (90).

**G. Capstan Belt (81) (Refer to Fig. 22)**

1. Remove the flywheel holder (74) by removing 3 screws (131).
2. Detouch the shut-off belt (102).

**H. Flywheel (79) (Refer to Fig. 22)**

Remove the flywheel holder (74) by removing 3 screws (131).

**I. FF Arm Ass'y (28) (Refer to Fig. 23)**

Remove the screw (33) after removing the flywheel (79).

**J. Idler Ass'y (35) (Refer to Fig. 23)**

Remove the screw (33) after removing the flywheel (79).

**K. Take-up Lever Ass'y (68) (Refer to Fig. 23)**

Remove the E-ring (11).

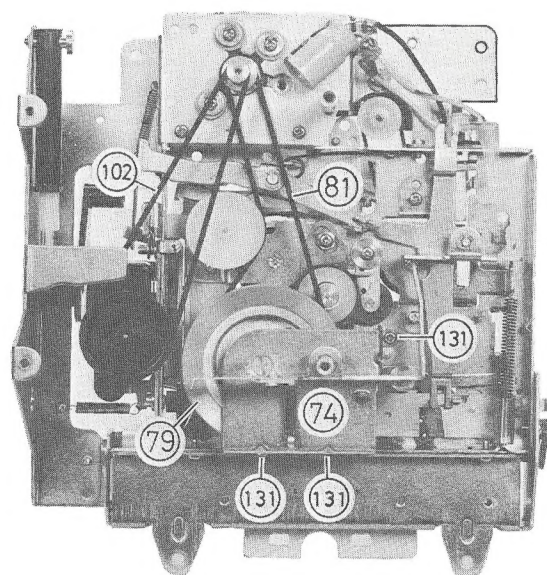


Fig. 22

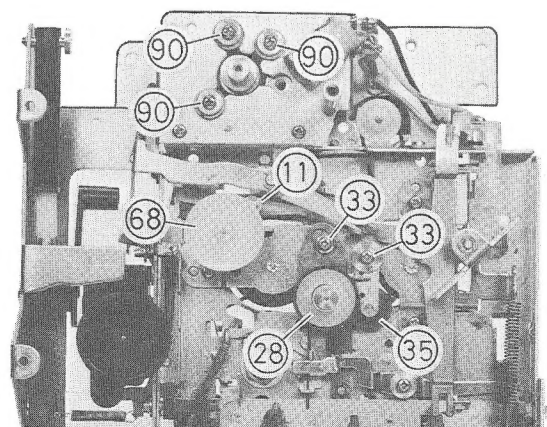


Fig. 23

# Tuner Alignment

Output Measuring: Speaker terminal (Impedance =  $6\Omega$ ), output level 50mW (0.55V/ $6\Omega$ )

## AM IF & RF Alignment

Input (SSG) Modulation 400Hz, Modulated to 30%

Step	Frequency Band	Input Signal		Place to be aligned	Set the V. Capacitor to
		Frequency	Given to		
1	MW (IF)	455kHz	Loop Antenna	L18,19,20	Minimum
2		Repeat the Step 1, and adjust for no further improvement.			
3	MW	520kHz	Loop Antenna	L13	Maximum
4		1650kHz		C71	Minimum
5		Repeat the Steps 3 & 4.			
6		600kHz	Loop Antenna	L8	600kHz Signal
7		1400kHz		C64	1400kHz Signal
8		Repeat the Steps 6 & 7, and adjust for no further improvement.			
9	LW	145kHz	Loop Antenna	L14	Maximum
10		360kHz		C68	Minimum
11		Repeat the Steps 9 & 10.			
12		160kHz	Loop Antenna	L9	160kHz Signal
13		350kHz		C65	350kHz Signal
14		Repeat the Steps 12 & 13, and adjust for no further improvement.			
15	SW1	2.2MHz	Rod Antenna through Dummy Antenna	L15	Maximum
16		6.3MHz		C69	Minimum
17		Repeat the Steps 15 & 16.			
18		2.3MHz	Rod Antenna through Dummy Antenna	L10	2.3MHz Signal
19		6.0MHz		C66	6.0MHz Signal
20		Repeat the Steps 18 & 19, and adjust for no further improvement.			
21	SW2	5.9MHz	Rod Antenna through Dummy Antenna	L16	Maximum
22		6.3MHz		C70	Minimum
23		Repeat the Steps 21 & 22.			
24		5.9MHz	Rod Antenna through Dummy Antenna	L12	5.9MHz Signal
25		6.3MHz		C67	6.3MHz Signal
26		Repeat the Steps 24 & 25, and adjust for no further improvement.			
27	SW3	5.8MHz	Rod Antenna through Dummy Antenna	L17	Maximum
28		18.6MHz		C8	Minimum
29		Repeat the Steps 27 & 28.			
30		6.0MHz	Rod Antenna through Dummy Antenna	L11	6.0MHz Signal
31		18.0MHz		C7	18.0MHz Signal
32		Repeat the Steps 30 & 31, and adjust for no further improvement.			



### FM IF & Discriminator Alignment

Input (Sweep Generator) : TP3 (hot) & TP2

Output (Oscilloscope) : IF TP4 (hot) & TP7  
Discriminator TP6 (hot) & TP7

Step	Mode	Place to be aligned	Wave form
1	IF	L3	Fig. 24
2	Discriminator	L5	Fig. 25

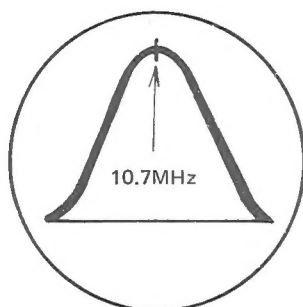


Fig. 24

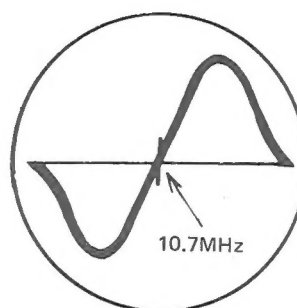


Fig. 25

### FM RF Alignment

Input (SSG): Use 75Ω terminal, modulation 400Hz modulated to 22.5kHz deviation.  
Connect Hot side to TP1 and Cold side to TP2.

Step	Frequency Band	Input Signal		Place to be aligned	Set the V. Capacitor to
		Frequency	Given to		
1	FM	87.5MHz	TP1 & TP2	L4	Maximum
2		109MHz		C4	Minimum
3		Repeat the Steps 1 & 2.			
4		90MHz	TP1 & TP2	L1	90MHz Signal
5		106MHz		C2	106MHz Signal
6		Repeat the Steps 4 & 5, and adjust for no further improvement.			

### FM MPX Alignment

#### A. 19kHz Alignment (regular Method)

1. Connect a frequency counter to the test point TP5.
2. Adjust the variable resistor R31 so that the frequency becomes 19kHz  $\pm$  250Hz.

#### B. 19kHz Alignment (Simplified Method)

1. Tune to a FM stereo broadcast.
2. Set the variable resistor R31 to the center position of the range in where the stereo indicator keeps lighting.

#### C. Separation Alignment

1. Connect a FM stereo signal generator across the test points TP1 & TP2.
2. Connect a V.T.V.M. or oscilloscope across the test points TP6 & TP7.
3. Adjust the variable resistor R34 to minimize the output of right channel signal.

## Parts Arrangement for Alignment

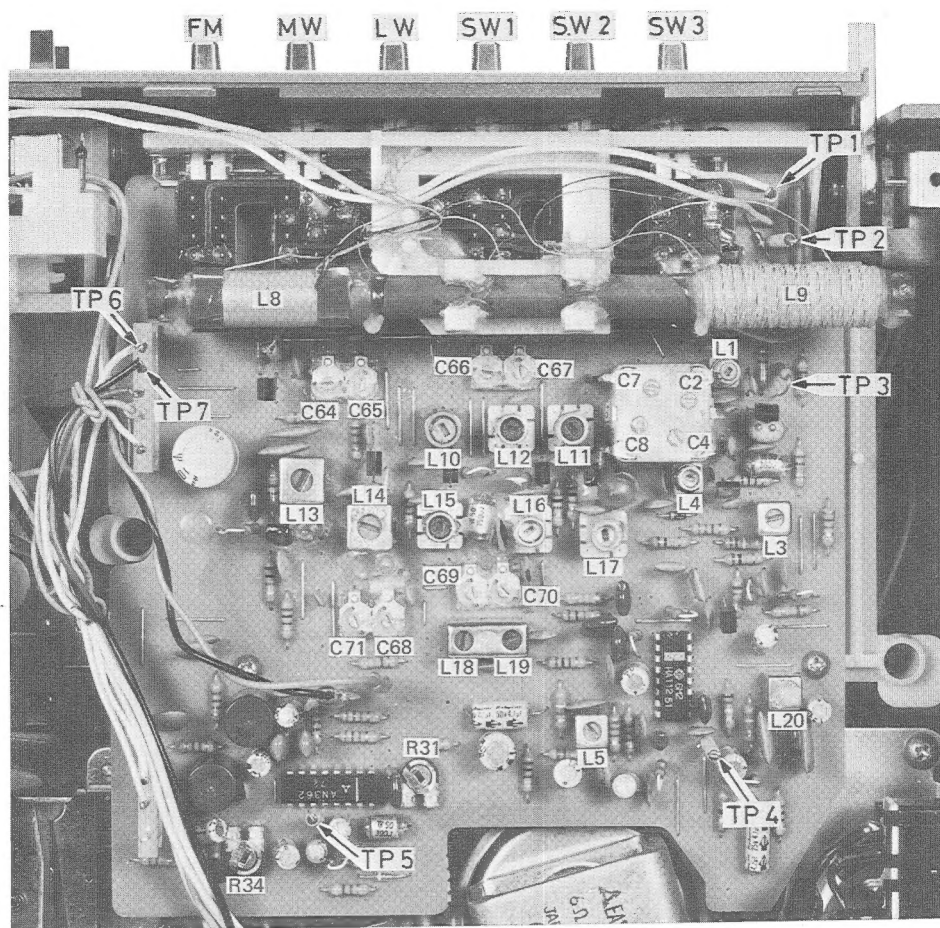
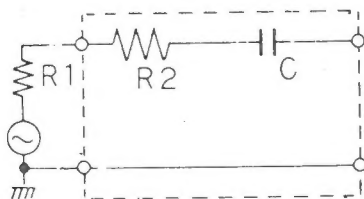


Fig. 26

## Dummy Antenna



$R1 + R2 = 80\Omega$   
 $C = 10\text{pF}$   
 $R1$ : Output impedance of S.S.G.

Fig. 27



# Amplifier Alignment

FUNCTION Switch : TAPE

Mode Switches : Center Position (except Biphonic Processor Alignment)

- Note:**
1. Align in numerical order.
  2. When changing the play/record head align all items from 1. to 5.
  3. Set the slider of semi-fixed variable resistors to the center position, when replacing them, before aligning.

## 1. Azimuth Alignment

- a. Connect a dual channel oscilloscope to the output terminals of DIN socket.
- b. Playback the reference tape (10kHz, 25mM/mm, -15dB).
- c. Adjust the head azimuth so that the output signals of left and right channels become maximum and in phase.

**Note:** If the head cover is removed, the azimuth alignment can be done though the mechanism has been mounted in the cabinet. As for removing the head cover, refer to page 7.

## 2. Playback Level Alignment

- a. Connect a V.T.V.M. to the output terminals of DIN socket.
- b. Playback the reference tape (1kHz, 16mM/mm).
- c. Adjust R168 (left channel) and R268 (right channel) so that the output becomes 0.6V.

## 3. Recording Level Alignment

- a. Remove the solder on the part (A) of copper side to open circuit as shown in Fig. 28.
- b. Set the TAPE switch to NORMAL, REC switch to MANUAL and REC LEVEL controls to MAX. in the recording mode.
- c. Connect the V.T.V.M. across R108 (left) and R208 (right).

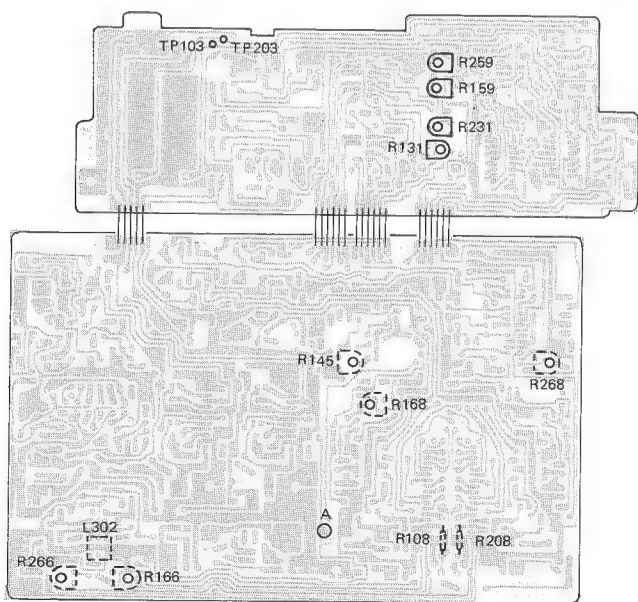


Fig. 28

- d. Supply the signal (1kHz, -60dBs) to the input terminals of DIN socket.

**Note:** Do not supply the signal to both channels at once.

- e. Adjust R131 (left) and R231 (right) so that the voltage becomes 0.7mV ( $70\mu\text{A}/10\Omega$ ).

## 4. Level Meter Alignment

- a. Follow the items a. & b. of "Recording Level Alignment".
- b. Supply the signal (1kHz, -60dBs) to both input terminals of DIN socket.
- c. Adjust the R145 so that the left and right level meters deflect to the same level.
- d. Solder the part (A).

## 5. Bias Alignment

- a. Set the BEAT cut switch to the lower position.
- b. Connect the V.T.V.M. and frequency counter across R108 and R208.
- c. Adjust L302 so that the frequency becomes 71kHz in the recording mode.
- d. Adjust R166 (left) and R266 (right) so that the voltages become 5.4mV ( $540\mu\text{A}/10\Omega$ ).

## 6. Biphonic Processor Alignment

- a. Set the MODE switches to BIPHONIC PROCESS and BINAURAL → BIPHONIC position and set the TONE controls to the center position (click stopped).
- b. Connect a dual channel V.T.V.M. to the test points TP103 (left) and TP203 (right).
- c. Supply the signal (125Hz, -70 dBs) to the left input terminal of DIN socket.
- d. Adjust R159 so that the right channel output is less than left channel output by 2.5dB.
- e. After left channel alignment, supply the signal to the right input terminal of DIN socket and adjust R259 as the same steps as R159.

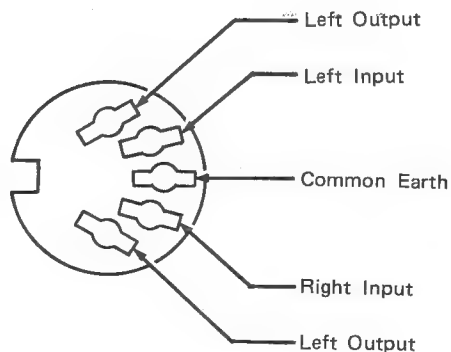


Fig. 29

# Adjustment of Cassette Mechanism

## TIMING OF MAIN SWITCH & BRAKING (Refer to Fig. 30)

1. Check to see that the main switch turns on after the brake of take-up and supply disks has been released, if the PLAY, CUE or REVIEW button is gradually pressed.
  2. If the timing is out of order, check that the clearance (D) between the brake lever and the projection of push button cam is approximately 0.2mm, in the stop mode. If the clearance is less than 0.2mm, bend the part (1) of brake lever to the (A) direction. Bend the part (2) of brake lever to (B) or (C) direction so that the brake lever contacts slightly with the actuator of main switch to adjust the timing of main switch.
- After adjustment check that the main switch turns off in the stop mode.
3. If the brake does not actuate optimally, bend the part (3) of stop arm to (F) direction.

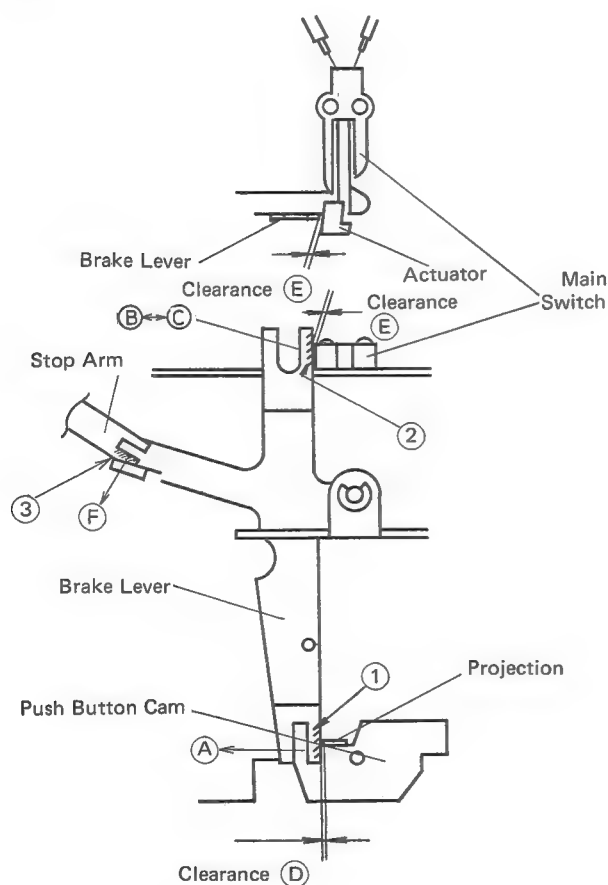


Fig. 30

## THRUST OF FLYWHEEL (Refer to Fig. 31)

The clearance between the top of flywheel shaft and the thrust screw should be within 0.2 to 0.4mm. If the clearance is out of limit, adjust the thrust screw for normal value.

**Note:** After adjustment fix the thrust screw with lock adhesive.

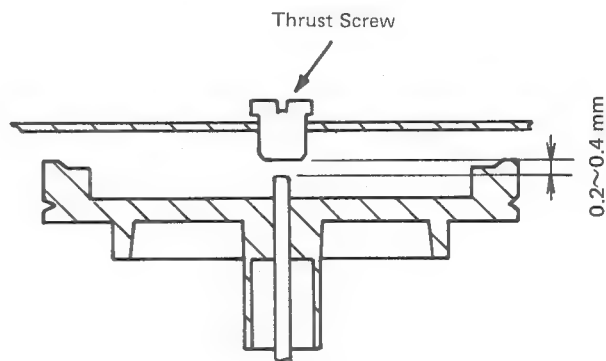


Fig. 31

## AUTO STOP MECHANISM (Refer to Fig. 32)

Check that the control button returns its normal position after the tape has stopped, in every modes, playback, recording, F.F. and rewinding.

1. If the kick lever does not press the push button cam, though the kick lever is swung, bend the part (1) of kick lever to the (A) direction to adjust the stroke of kick lever.
2. In the recording mode, if the kick lever does not return to its original position, though the stop mechanism has functioned normally, bend the part (1) of kick lever to the (B) direction.
3. If the mechanism stops automatically while the tape is running or does not stop when the tape stops, change the shut-off assembly.
4. Check that the mechanism does not stop, in every modes, while the PAUSE button is pressed.

**Note:** If the part (1) is excessively bended to the (A) direction the release lever inside the shut-off assembly may not return its normal position.



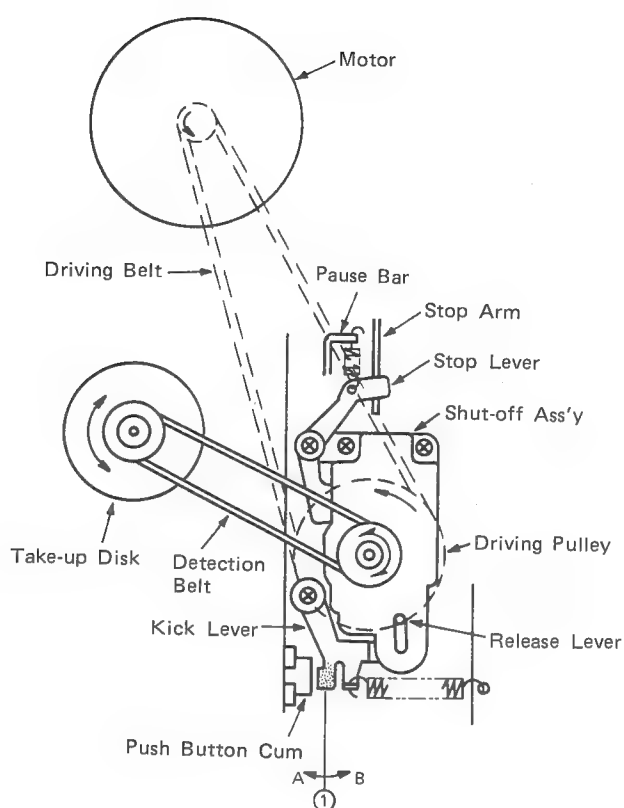


Fig. 32

### PAUSE MECHANISM (Refer to Fig. 33)

1. In the playback mode, check to see that the pinch roller separates from the capstan and the take-up idler separates from the take-up disk when the PAUSE button has been pressed.
2. If the pinch roller separates extremely earlier than the take-up idler, bend the part (1) of pause bar to the (A) direction.
3. If the pinch roller separates later than the take-up idler, bend the part (1) to the (B) direction.

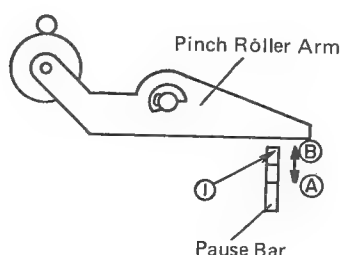


Fig. 33

### CUE & REVIEW MECHANISM (Refer to Fig. 34)

1. Timing
  - a. In the playback mode, if the CUE or REVIEW button is gradually pressed, the take-up idler separates from the take-up disk after the pinch roller has separated from the capstan and the take-up disk temporarily stops turning and then the tape is fast forwarded or rewinded.
  - b. When the CUE or REVIEW button is gradually released, the take-up disk turns first and then the pinch roller turns after the tape has temporarily stopped. The mechanics becomes the playback mode.
  - c. Check that the tape is not fast forwarded or projected from the cassette half at the beginning of cue or review action.
2. Adjustment of timing
  - a. If the tape is projected from the cassette half at the beginning of cue or review action, the take-up idler separates from the take-up disk before the pinch roller has separated from the capstan. Adjust the timing by bending the part (1) of slide base to the (A) direction.
  - b. If the tape is fast forwarded at the beginning of cue or review action, bend the part (1) to the (B) direction.
  - c. After adjustment, check that the gap (C) exists between the take-up idler arm and the slide base in the playback mode.

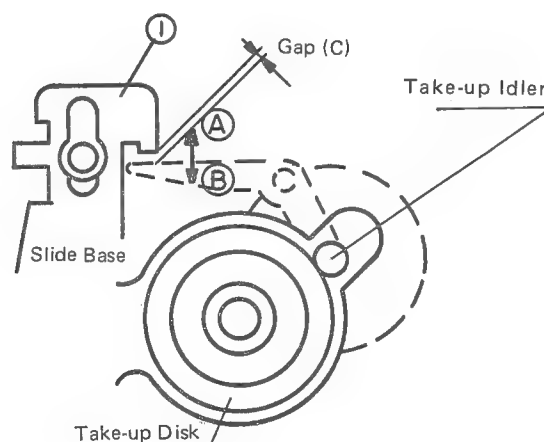


Fig. 34

## LOCATION OF HEADS

The play/record and erasing heads should be positioned as follows.

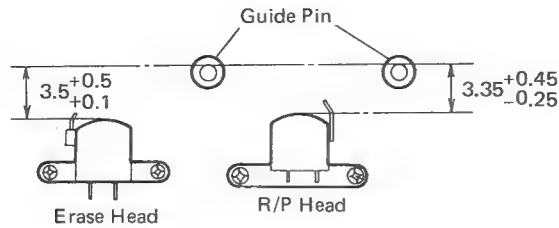


Fig. 35

## TAPE SPEED (Refer to Fig. 36)

1. The tape speed should be within 2940Hz (-2%) to 3090Hz (+3%) by reference tape.
2. If the speed is out of limit, adjust it by inserting the small screw-driver into the adjusting hole of motor.
  - a. If the speed is less than -2% turn the driver clockwise.
  - b. If the speed is over +3%, turn the driver counterclockwise.

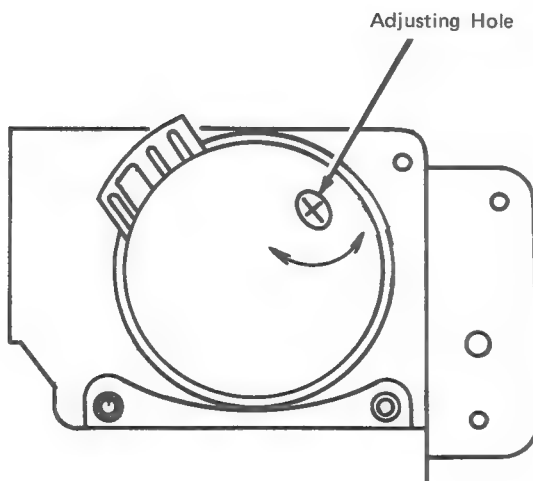


Fig. 36

## TORQUE

### 1. Playback Torque

In the playback mode, the take-up torque of take-up disk should be within 40 to 70g.cm.

If the torque is out of limit, clean the rubber part of take-up disk or change the take-up disk.

### 2. F.F. Torque

In the F.F. mode, the take-up torque of take-up disk should be more than 60g.cm.

If the torque is less than 60g.cm, clean the rubber part of F.F. idler or change the F.F. arm assembly.

### 3. Rewind Torque

In the rewind mode, the winding torque of supply disk should be more than 60g.cm.

If the torque is less than 60g.cm, clean the rubber parts of F.F. idler and rewind idler or change the F.F. arm assembly or rewind idler.



# How to Fit Dial Cord

## 1. Front Cabinet Section

- Dial Cord:  $\phi 0.5 \times 1505\text{mm}$  (20 mil  $\times$  59-1/4")  
(filament: Kevlar, braided sheath: Tetoron)
- Turn the dial drum fully clockwise and fit the cord in numerical order as shown in Fig. 37.
- Fix the needle to the cord as shown in Fig. 38.
- Adjust the starting point : turn the tuning knob fully counterclockwise and set the pointer of needle to the starting point of dial scale (refer to Fig. 39).

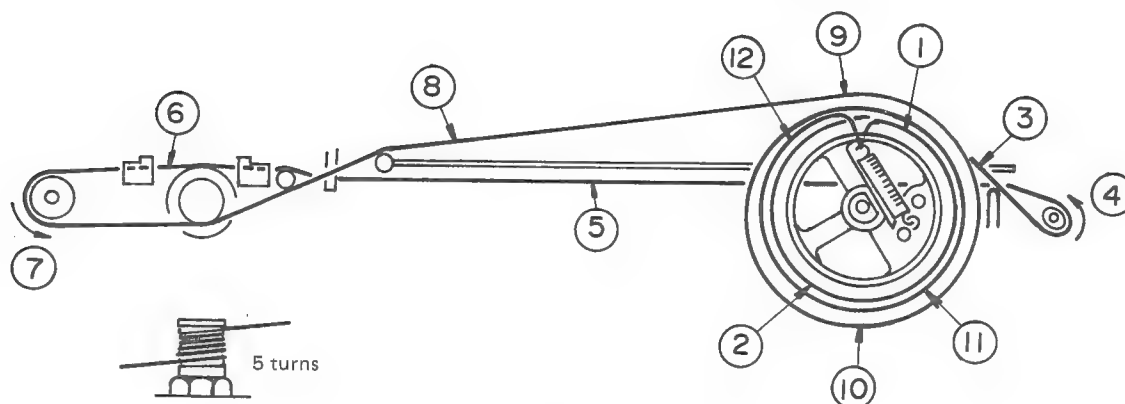


Fig. 37

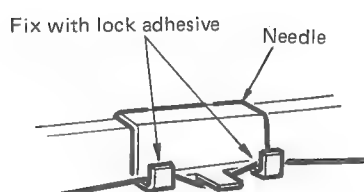


Fig. 38

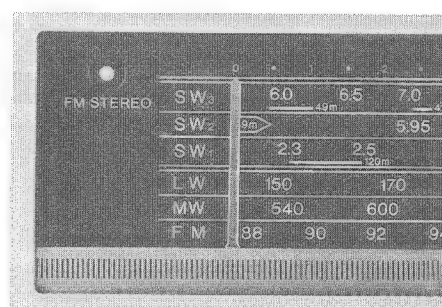


Fig. 39

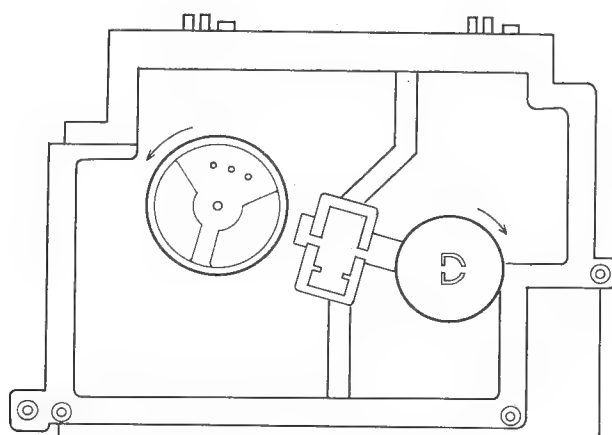


Fig. 40

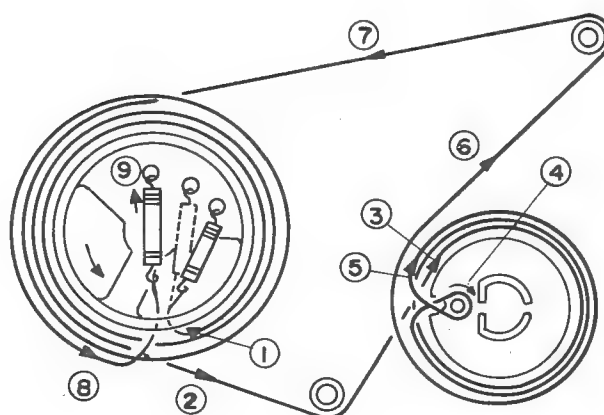


Fig. 41

# Block Diagram

## Tuner Section

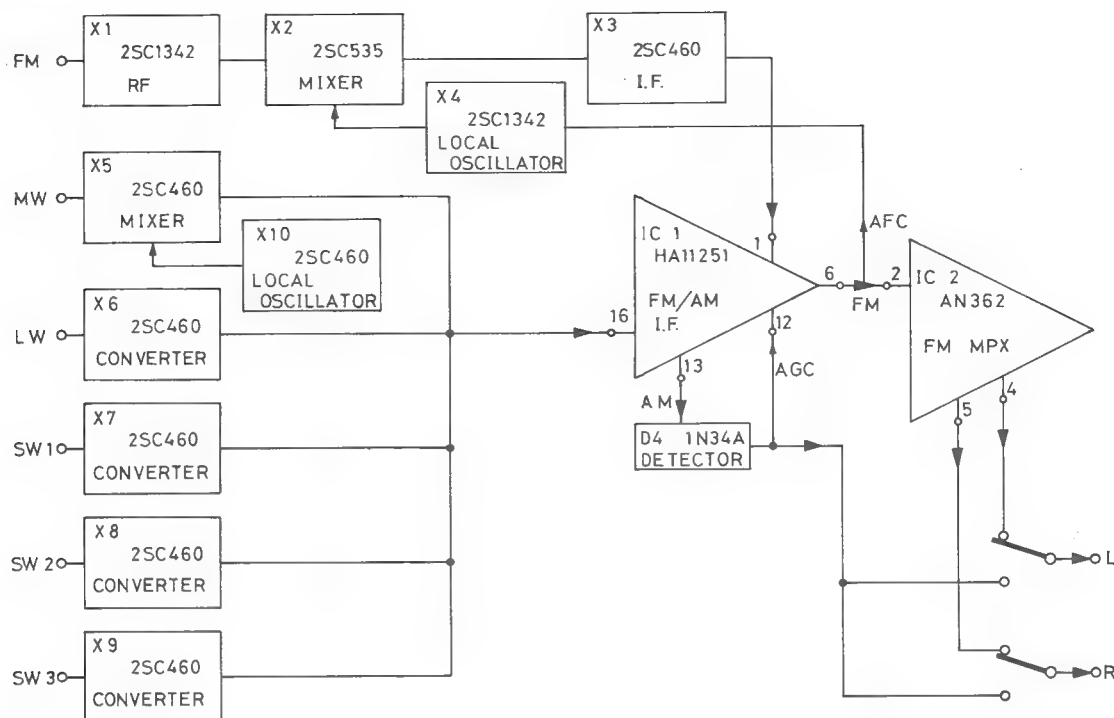


Fig. 42

## Playback Mode

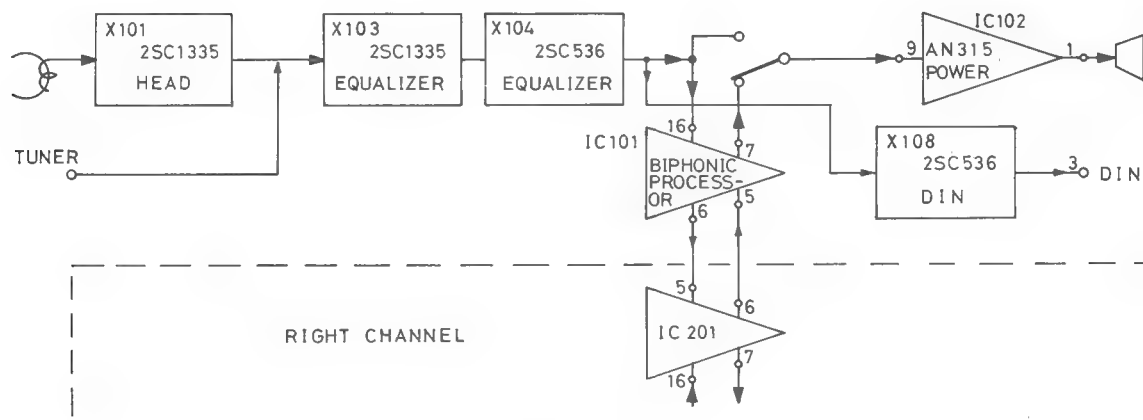


Fig. 43

## Recording Mode

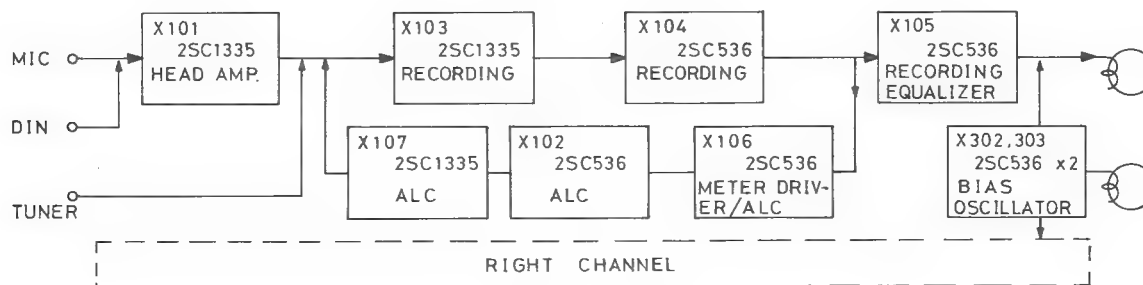


Fig. 44



# Wiring Connection

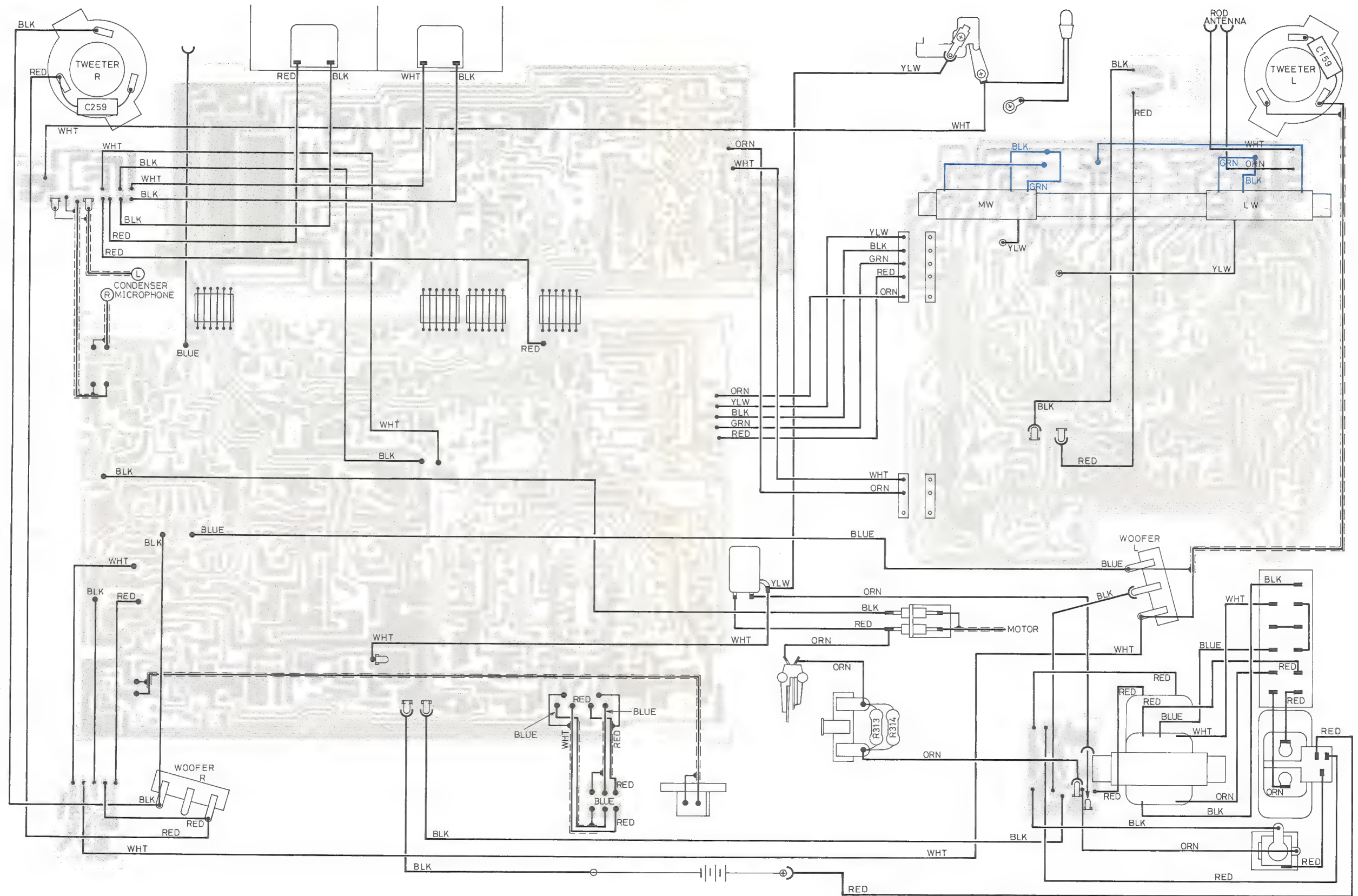
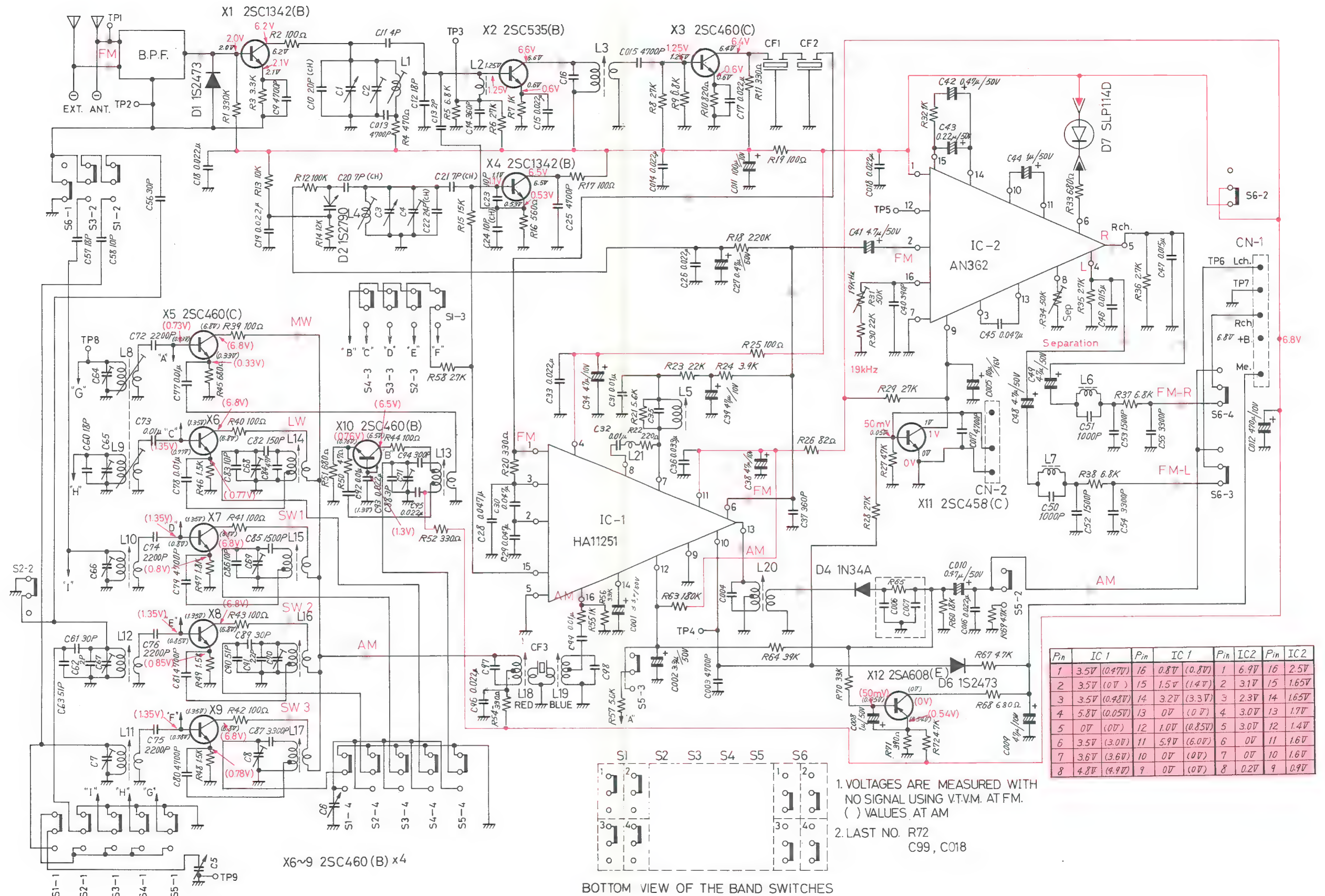


Fig. 45

## Schematic Diagram of RC-828L/LB (Tuner)



**Fig. 46**



# Schematic Diagram of RC-828L/LB (Amplifier)

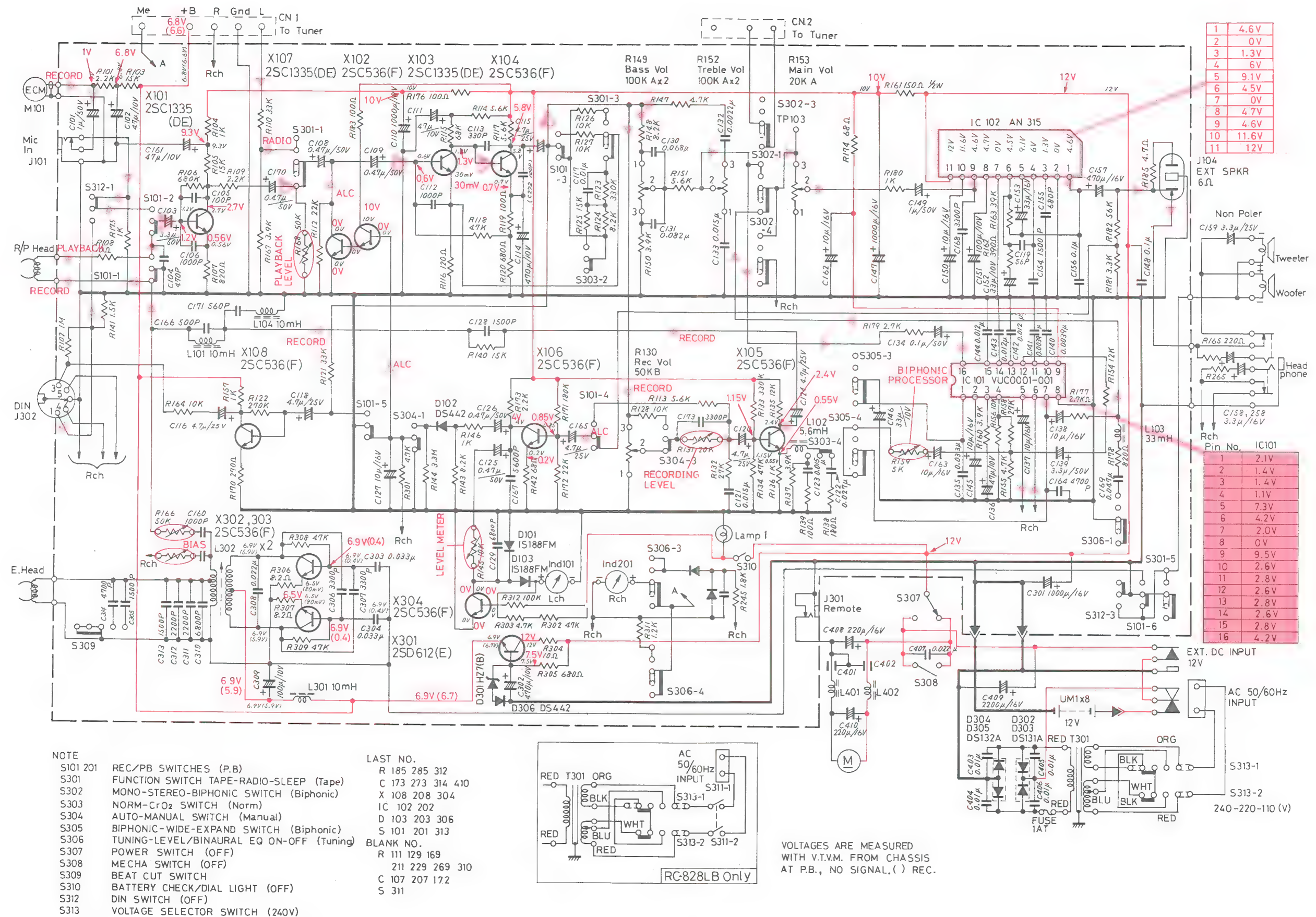


Fig. 47



# Tuner Circuit Board Ass'y

TOP

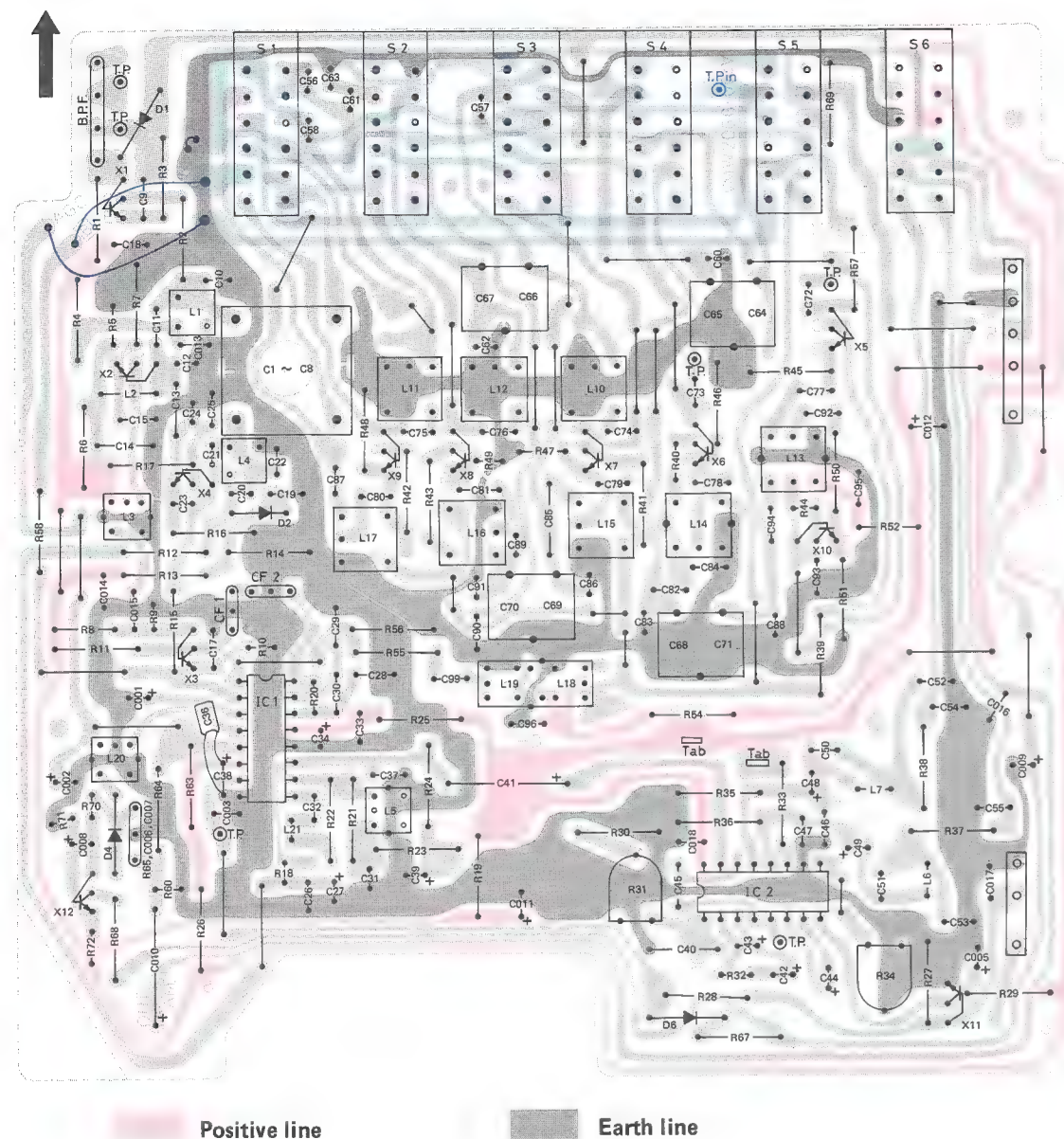


Fig. 48

Note: The circuit board assembly will not be available as spare part.

## Transistors

Ref. No.	Parts No.	Description	Pc	ft
X1,4	2SC1342(B)	Silicon (HITACHI)	0.1W	250MHz
X2	2SC535(B)	" ( " )	"	940MHz
X3,5	2SC460(C)	" ( " )	0.2W	230MHz
X6,7,8,9,10	2SC460(B)	" ( " )	"	"
X11	2SC458(C)	" ( " )	"	"
X12	2SA608(E)	(SANYO)	0.1W	180MHz

## ICs & Diodes

Arsterisked parts (\*) show new parts

Ref. No.	Parts No.	Parts Name	Description
IC1	*HA11251	Integrated Circuit	HITACHI
IC2	AN362	"	MATSUSHITA
D1,6	1S2473	Silicon Diode	TOYO DENGU
D2	1S2790	Variable Capacitance Diode	HITACHI
D4	1N34A	Germanium Diode	"

## Resistors

Ref. No.	Parts No.	Parts Name	Description
R1	QRD141K-334	Carbon	330k $\Omega$ ¼W
R2,17,19,25	" -101	"	100 $\Omega$ "
R3	" -332	"	3.3k $\Omega$ "
R4	" -471	"	470 $\Omega$ "
R5	" -682	"	6.8k $\Omega$ "
R6	" -273	"	27k $\Omega$ "
R7	" -102	"	1k $\Omega$ "
R8	QRD143K-273	"	27k $\Omega$ "
R9	" -682	"	6.8k $\Omega$ "
R10	" -821	"	820 $\Omega$ "
R11	QRD141K-331	"	330 $\Omega$ "
R12	" -104	"	100k $\Omega$ "
R13	" -103	"	10k $\Omega$ "
R14	" -123	"	12k $\Omega$ "
R15	" -153	"	15k $\Omega$ "
R16	" -561	"	560 $\Omega$ "
R18	QRD143K-224	"	220k $\Omega$ "
R20	" -331	"	330 $\Omega$ "
R21	QRD141K-562	"	5.6k $\Omega$ "
R22	" -221	"	220 $\Omega$ "
R23,30	" -223	"	22k $\Omega$ "
R24	" -392	"	3.9k $\Omega$ "
R26	" -820	"	82 $\Omega$ "
R27	" -473	"	47k $\Omega$ "
R28,29	" -273	"	27k $\Omega$ "
R31,34	QVP8A0B-014	Variable	10k $\Omega$ B-curve
R32	QRD143K-102	Carbon	1k $\Omega$ ¼W
R33,45,51	QRD141K-681	"	680 $\Omega$ "
R35,36	" -272	"	2.7k $\Omega$ "
R37,38	" -682	"	6.8k $\Omega$ "
R39,41,42,43	" -101	"	100 $\Omega$ "
R40,44	QRD143K-101	"	" "
R46,48	QRD141K-152	"	1.5k $\Omega$ "
R47	QRD143K-182	"	1.8k $\Omega$ "
R49	" -152	"	1.5k $\Omega$ "
R50	QRD141K-470	"	47 $\Omega$ "
R52	QRD143K-331	"	330 $\Omega$ "

Ref. No.	Parts No.	Parts Name	Description
R54	QRD141K-331	Carbon	330Ω ¼W
R55	" -102	"	1kΩ "
R56	" -333	"	33kΩ "
R57	" -562	"	5.6kΩ "
R58	" -272	"	2.7kΩ "
R60	QRD143K-183	"	18kΩ "
R63	QRD141K-184	"	180kΩ "
R64	" -393	"	39kΩ "
R65	03126-15	CR Block	includes C006,007
R67,69	QRD141K-472	Carbon	4.7kΩ ¼W
R68	" -681	"	680Ω "
R70	QRD143K-333	"	33kΩ "
R71	" -391	"	390Ω "
R72	" -472	"	4.7kΩ "

## Capacitors

Ref. No.	Parts No.	Parts Name	Description
C1~8	QAP1224-504	Variable	
C9,25	QCF11EZ-472	Ceramic	4700pF 25V
C10	QCT05CH-200	"	20pF 50V
C11	QCS11HJ-4R0	"	4pF "
C12	" -180	"	18pF "
C13	" -2R0	"	2pF "
C14	QFS21HJ-361	Polystyrol	360pF "
C15,17,19	QCF11EZ-223	Ceramic	0.022μF 25V
C18	QFM41HM-223	Mylar	" 50V
C20,21	QCT05CH-7R0	Ceramic	7pF "
C22	" -240	"	24pF "
C23	QCS11HJ-100	"	10pF "
C24	QCT05CH-100	"	" "
C26,33	QCF11EZ-223	"	0.022μF 25V
C27	QEW41HA-474	Electrolytic	0.47μF 50V
C28,29,30,45	QFM41HM-473	Mylar	0.047μF "
C31,32	QCF11EZ-103	Ceramic	0.01μF 25V
C34,38,39	QEW41AA-476	Electrolytic	47μF 10V
C36	QFM41HM-333	Mylar	0.033μF 50V
C37	QCS11HJ-361	Ceramic	360pF "
C40	QFS21HJ-391	Polystyrol	390pF "
C41	QEW21EA-475	Electrolytic	4.7μF 25V
C42	QEC81HM-474	"	0.47μF 50V
C43	QEC81HM-224	"	0.22μF "
C44	QEW41HA-105	"	1μF "
C46,47	QFM41HM-153	Mylar	0.015μF "
C48,49	QEW41EA-475	Electrolytic	4.7μF 25V
C50,51	QCY41HK-102	Ceramic	1000pF 50V
C52,53	" -152	"	1500pF "
C54,55	" -332	"	3300pF "
C56,61	QCS11HJ-300	"	30pF "
C57,60	" -180	"	18pF "
C58	" -100	"	10pF "
C62	" -2R0	"	2pF "
C63	" -510	"	51pF "
C64-65,66-67	QAT2002-001	Trimmer	
C68-71,69-70			
C72 74,75 76	QCY41HK-222	Ceramic	2200pF 50V
C73,99	QCF11EZ-103	"	0.01μF 25V
C77,78 92	QCY41EK-103	"	" "
C79,80,81	QCY41HK-472	"	4700pF 50V

Ref. No.	Parts No.	Parts Name	Description
C82	QFS41HJ-151	Polystyrol	150pF 50V
C83,86	QCS11HJ-100	Ceramic	10pF "
C84	" -470	"	47pF "
C85	QFS21HJ-152	Polystyrol	1500pF "
C87	QFS41HJ-332	"	3300pF "
C88	QCS11HJ-3R0	Ceramic	3pF "
C89	QCT05CH-300	"	30pF "
C90	QCS11HJ-510	"	51pF "
C91	QCT05CH-220	"	22pF "
C93,96	QCF11EZ-223	"	0.022μF 25V
C94	QFS41HJ-301	Polystyrol	300pF 50V
C95	QFM41HM-223	Mylar	0.022μF "
C001,002	QEW41HA-335	Electrolytic	3.3μF "
C003	QCF11EZ-472	Ceramic	4700pF 25V
C005	QEW41CA-106	Electrolytic	10μF 16V
C006,007	03126-15	CR Block	includes R65
C008	QEW41HA-105	Electrolytic	1μF 50V
C009	QEW41AA-476	"	47μF 10V
C010	QEW21HA-474	"	0.47μF 50V
C011	QEW41AA-107	"	100μF 10V
C012	" -477	"	470μF "
C013,015,017	QCF11EZ-472	Ceramic	4700pF 25V
C014,016	QFM41HM-223	Mylar	0.022μF 50V
C018	QCF11EZ-223	Ceramic	" 25V

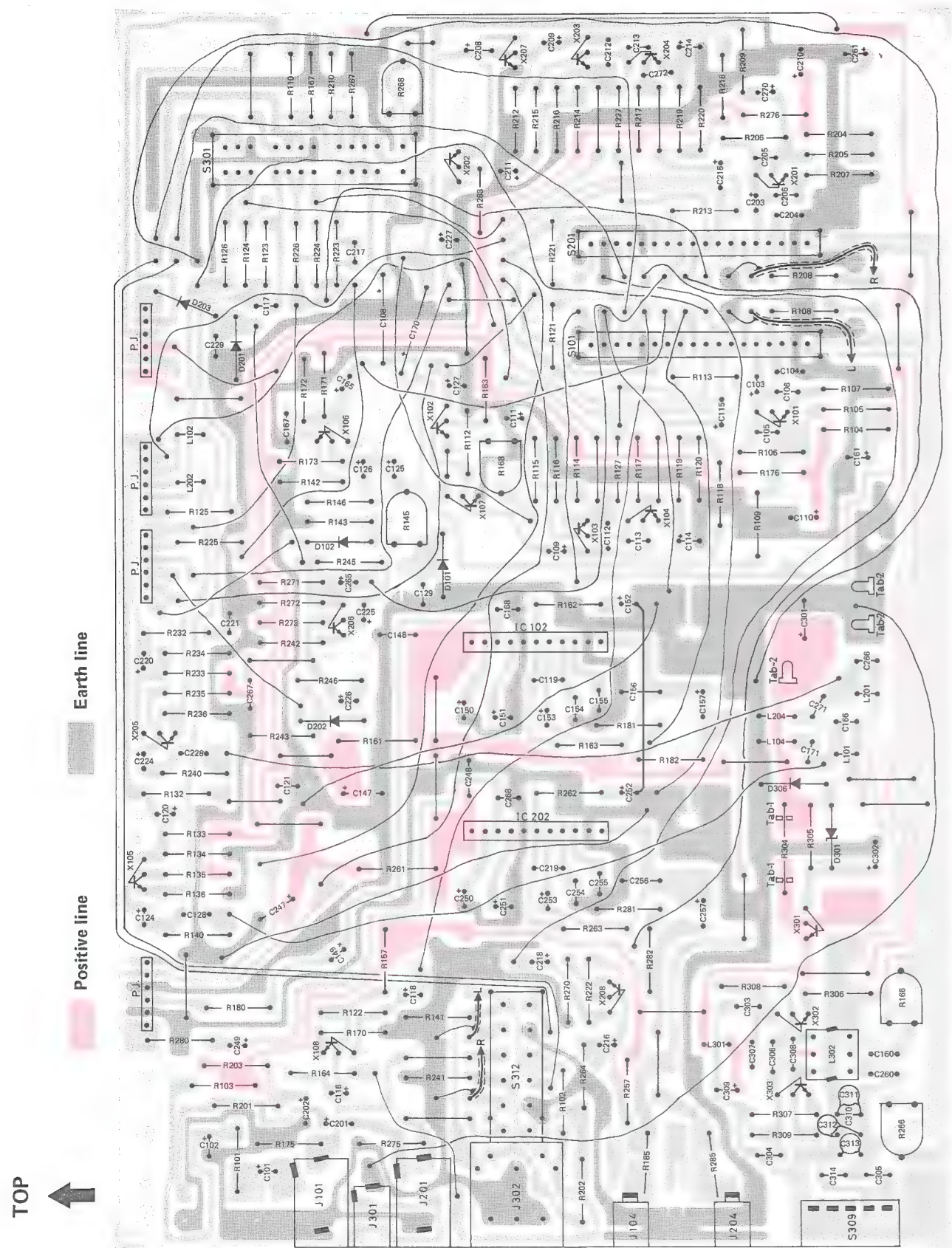
## Others

Asterisked parts (\*) show new parts

Ref. No.	Parts No.	Parts Name	Description
B.P.F.	*VBP3M4E-001	Band Pass Filter	FM Antenna
CF1,2	V03059-3	Ceramic Filter	FM I.F.
L1	*V03105-030	Coil	FM RF
L2	03226-1K	Inductor	FM IF Trap
L3,5	V03068-7	I.F.T.	FM
L4	*V03105-029	Coil	FM Osc.
L6,7	03226-18	Inductor	
L10	*VQR1001-208	Coil	SW1 Antenna
L11	" -202	"	SW3 "
L12	" -207	"	SW2 "
L13	VQM1T03-201	"	MW Osc.
L14	46923-42	"	LW "
L15	V03101-12	"	SW1 "
L16,17	03160-74	"	SW2,3 Osc.
L18,19	V03067-026	I.F.T.	AM
L20	-025	"	"
L21	03226-024	Inductor	
S1~6	*QSP0261-007	Push Switch	BAND
T.Pin	A74138-2	Test Pin	
T.P.	V04041-1	Test Point	
Tab	V43895-1	Tab	
	QMC0529-001	Plug	5-pin
	QMC0329-001	"	3-pin



## Amplifier Circuit Board Ass'y



**Fig. 49**

**Note:** The circuit board assembly will not be available as spare part.

## Transistors

Ref. No.	Parts No.	Description	Pc	fT
X101,103,201,203	2SC1335(DE)	Silicon (HITACHI)	0.2W	230MHz
X102,104,202,204	2SC536(F)AUD	" (SANYO)	0.25W	100MHz
X105,106,205,206	"	" ( " )	"	"
X107,207	2SC1335(DE)	" (HITACHI)	0.2W	230MHz
X108,208	2SC536(F)AUD	" (SANYO)	0.25W	100MHz
X301	2SD612(E)	" ( " )	1W	"
X302,303	2SC536(F)AUD	" ( " )	0.25W	"

## ICs & Diodes

Asterisked parts (\*) show new parts

Ref. No.	Parts No.	Parts Name	Description
IC102,202	AN315	Integrated Circuit	MATSUSHITA
D101,201,203	1S188FM	Germanium Diode	SANYO
D102,202,306	DS442	Silicon Diode	"
D301	*HZ7(B)	Zener Diode	HITACHI

## Resistors

Ref. No.	Parts No.	Parts Name	Description	
R101,109,201,209	QRD141K-222	Carbon	2.2kΩ	¼W
R102,202	" -105	"	1MΩ	"
R103,105,203 205	" -153	"	15kΩ	"
R104,204	" -102	"	1kΩ	"
R106,206	" -684	"	680kΩ	"
R107,207	" -821	"	820Ω	"
R108,208	" -100	"	10Ω	"
R110,121,210 221	" -333	"	33kΩ	"
R112,212	" -223	"	22kΩ	"
R113,114,213.214	" -562	"	5.6kΩ	"
R115,215	" -683	"	68kΩ	"
R116,216	" -121	"	120Ω	"
R117,217	" -562	"	5.6kΩ	"
R118,218	" -473	"	47kΩ	"
R119,219	" -101	"	100Ω	"
R120,220	" -681	"	680Ω	"
R122,222	" -274	"	270kΩ	"
R123,133,223,233	" -334	"	330kΩ	"
R124,224	" -822	"	8.2kΩ	"
R125,225	" -153	"	15kΩ	"
R126,127,226,227	" -103	"	10kΩ	"
R132,232	" -273	"	27kΩ	"
R134,234	" -473	"	47kΩ	"
R135,235	" -123	"	12kΩ	"
R136,146,236,246	" -102	"	1kΩ	"
R140,240	" -153	"	15kΩ	"
R141,241	" -152	"	1.5kΩ	"
R142,242	" -680	"	68Ω	"
R143,243	" -822	"	8.2kΩ	"
R145	QVP8A0B-014A	Variable	10kΩ	B-curve
R157,257	QRD141K-102	Carbon	1kΩ	¼W
R161,261	QRC121K-151	Composition	150Ω	½W
R162,262	QRD141K-391	Carbon	390Ω	¼W
R163,263	" -393	"	39kΩ	"
R164,264	" -103	"	10kΩ	"
R166,168,266,268	QVP8A0B-054A	Variable	50kΩ	B-curve
R167,267	QRD141K-392	Carbon	3.9kΩ	¼W



Ref. No.	Parts No.	Parts Name	Description	
R170,270	QRD141K-271	Carbon	270Ω	¼W
R171,271	" -184	"	180kΩ	"
R172,272	" -223	"	22kΩ	"
R173,273	" -222	"	2.2kΩ	"
R175,180,275,280	" -102	"	1kΩ	"
R176,183,276,283	" -101	"	100Ω	"
R181,281	" -332	"	3.3kΩ	"
R182,282	" -563	"	56kΩ	"
R185,285	QRD121J-4R7	"	4.7Ω	½W
R245	QRD141K-182	"	1.8kΩ	¼W
R304	" -100	"	10Ω	"
R305	" -681	"	680Ω	"
R306,307	" -8R2	"	8.2Ω	"
R308,309	" -473	"	47kΩ	"

## Capacitors

Ref. No.	Parts No.	Parts Name	Description	
C101,201	QEW41HA-105	Electrolytic	1μF	50V
C102,111,202,211	QEW41AA-476	"	47μF	10V
C103,118,203,218	QEW41HA-335	"	3.3μF	50V
C104,204	QCS11HJ-471	Ceramic	470pF	"
C105,205	" -101	"	100pF	"
C106,112,206,212	QCF11EZ-102	"	1000pF	25V
C108	QEW21HA-474	Electrolytic	0.47μF	50V
C109,209	QEW41HA-474	"	"	"
C110,210	QEW41AA-108	"	1000pF	10V
C113,213	QCS11HJ-331	Ceramic	330pF	50V
C114,214	QEW41AA-477D11	Electrolytic	470μF	10V
C115,116,215,216	QEW41EA-475	"	4.7μF	25V
C117,217	QFM41HJ-103	Mylar	0.01μF	50V
C119,219	QCS11HJ-560	Ceramic	56pF	"
C120,124,220,224	QEW41EA-475	Electrolytic	4.7μF	25V
C121,221	QFM41HK-153	Mylar	0.015μF	50V
C125,126,225,226	QEW41HA-474	Electrolytic	0.47μF	"
C127,227	QEW41CA-106	"	10μF	16V
C128,228	QCY41HK-152	Ceramic	1500pF	50V
C129,229	QFM41HK-682	Mylar	6800pF	"
C147,247	QEW41CA-108	Electrolytic	100μF	16V
C148,156,248,256	QFM41HK-104	Mylar	0.1μF	50V
C149,249	QEW41HA-105	Electrolytic	1μF	"
C150,250	QEW41CA-106	"	10μF	16V
C151,251	QEW41AA-107	"	100μF	10V
C152,252	" -336	"	33μF	"
C153,253	QEW41CA-336	"	"	16V
C154,254	QCY41HK-152	Ceramic	1500pF	50V
C155,255	" -681	"	680pF	"
C157,257	QEW41CA-477	Electrolytic	470μF	16V
C160,260	QCY41HK-102	Ceramic	100pF	50V
C161,261	QEW41AA-476	Electrolytic	47μF	10V
C165,265	QEW41EA-475	"	4.7μF	25V
C166,266	QFS41HJ-501	Polystyrol	500pF	50V
C167,267	QCY41HK-562	Ceramic	5600pF	"
C168,268	" -332	"	3300pF	"
C170	QEW21HA-474	Electrolytic	0.47μF	"
C171,271	QCS11HJ-561	Ceramic	560pF	"
C208,270	QEW41HA-474	Electrolytic	0.47μF	"
C272	QCS11HJ-101	Ceramic	100pF	"

Ref. No.	Parts No.	Parts Name	Description	
C301	QEW41CA-108	Electrolytic	1000μF	16V
C302	QEW41AA-477	"	470μF	10V
C303,304	QFM41HK-333	Mylar	0.033μF	50V
C305,313	QCY41HK-152	Ceramic	1500pF	"
C306,307	" -332	"	3300pF	"
C308	QFM41HK-223	Mylar	0.022μF	"
C309	QEW41AA-107	Electrolytic	100μF	10V
C310	QFM41HK-682	Mylar	6800pF	50V
C311,312	QCY41HK-222	Ceramic	2200pF	"
C314	" -472	"	4700pF	"

## Others

Asterisked parts (\*) show new parts.

Ref. No.	Parts No.	Parts Name	Description
L101,104,201,204	03226-17	Inductor	
L102,202	" -19	"	
L301	" -17	"	
L302	V03083-019	Coil	Bias Osc.
S101,201	QSS6201-201A	Slide Switch	Play/Record
S301	QSS6301-023	"	Function
S312	QSP4210-061	Push Switch	DIN
J101,104,201,204	*V03104-062	Jack Board Ass'y	
301,S309			
J302	QMC9014-002	DIN Socket Ass'y	
P.J.	*V45043-001	PC Joiner	
Tab-1	A43596-001	Tab	
Tab-2	V43895-1	"	

## Control Circuit Board Ass'y

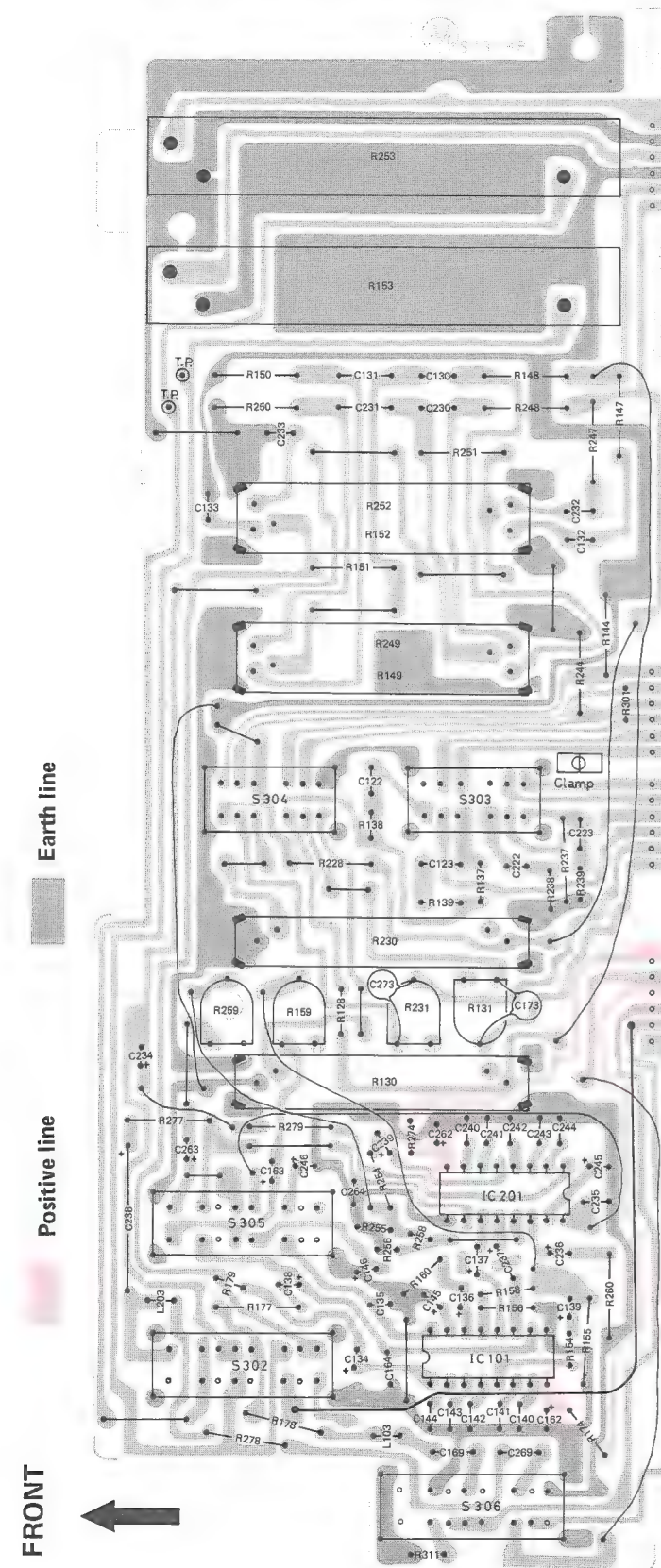


Fig. 50

Note: The circuit board assembly will not be available as spare part.

## IC

Asterisked parts (\*) show new parts.

Ref. No.	Parts No.	Description
IC101,201	*VUC0001-001A or -001B, or -001C	Biphonic Processor (JVC)

## Resistors

Ref. No.	Parts No.	Parts Name	Description
R128,156,256	QRD143K-103	Carbon	10k $\Omega$ 1/4W
R130,230	QVR0A6B-054	Variable (Slide)	50k $\Omega$ B-curve
R131,231	QVP8A0B-024A	"	20k $\Omega$ "
R137,160,237	QRD143K-392	Carbon	3.9k $\Omega$ 1/4W
R138,238	" -181	"	180 $\Omega$ "
R139,239	" -101	"	100 $\Omega$ "
R144,244	QRD141K-335	"	3.3M $\Omega$ "
R147,155,247	" -472	"	4.7k $\Omega$ "
R148,248	" -822	"	8.2k $\Omega$ "
R149,152,249,252	QVR2A6A-115	Variable (Slide)	100k $\Omega$ A-curve
R150,250,260	QRD141K-392	Carbon	3.9k $\Omega$ 1/4W
R151,251	" -562	"	5.6k $\Omega$ "
R153,253	QVT4DFA-024	Variable (Slide)	20k $\Omega$ A-curve
R154,254	QRD143K-123	Carbon	12k $\Omega$ 1/4W
R158,258	" -273	"	27k $\Omega$ "
R159,259	QVP8A0B-053A	Variable	5k $\Omega$ B-curve
R174,274	QRD143K-680	Carbon	68 $\Omega$ 1/4W
R177,277,279	QRD141K-272	"	2.7k $\Omega$ "
R178,278	" -821	"	820 $\Omega$ "
R179	QRD143K-272	"	2.7k $\Omega$ "
R228	QRD141K-103	"	10k $\Omega$ "
R255,301	QRD143K-472	"	4.7k $\Omega$ "
R311	" -122	"	1.2k $\Omega$ "

## Capacitors

Ref. No.	Parts No.	Parts Name	Description
C122,222	QFM41HK-273	Mylar	0.027 $\mu$ F 50V
C123,223	" -153	"	0.015 $\mu$ F "
C130,230	" -683	"	0.068 $\mu$ F "
C131,231	" -823	"	0.082 $\mu$ F "
C132,232	QCY41HK-222	Ceramic	2200pF "
C133,233	QFM41HK-153	Mylar	0.015 $\mu$ F "
C134,234	QEC81HM-104	Electrolytic	0.1 $\mu$ F "
C135,235	QFM41HK-333	Mylar	0.033 $\mu$ F "
C136,236	QEW41AA-476	Electrolytic	47 $\mu$ F 10V
C137,138,237	QEW41CA-106	"	10 $\mu$ F 16V
C139,239	QEW41HA-335	"	3.3 $\mu$ F 50V
C140,141,240,241	QFM41HJ-392	Mylar	3900pF "
C142,143,242,243	" -123	"	0.012 $\mu$ F "
C144,244	" -123	"	" "
C145,245	QEW41CA-106	Electrolytic	10 $\mu$ F 16V
C146,246	QEW41AA-336	"	33 $\mu$ F 10V
C162,163,262,263	QEW41CA-106	"	10 $\mu$ F 16V
C164,264	QCY41HK-472	Ceramic	4700pF 50V
C169,269	QFM41HK-473	Mylar	0.047 $\mu$ F "
C173,273	QCY41HK-332	Ceramic	3300pF "
C238	QEW21CA-106	Electrolytic	10 $\mu$ F 16V

— Continued on page 25 —

# Headphone Circuit Board Ass'y

TOP

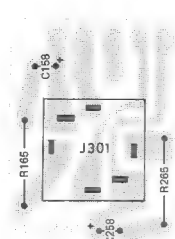


Fig. 51

Note: The circuit board assembly will not be available as spare part.

## Resistors

Ref. No.	Parts No.	Parts Name	Description
R165,265	QRD141K-221	Carbon	220Ω ¼W

## Capacitors

Ref. No.	Parts No.	Parts Name	Description
C158,258	QEW41HA-335	Electrolytic	3.3μF 50V

## Others

Ref. No.	Parts No.	Parts Name	Description
J301	QMS6301-008	Headphone Jack Ass'y	

— Continued from page 24 —

## Others

Ref. No.	Parts No.	Parts Name	Description
L103,203	03226-22	Inductor	MODE, METER TAPE, REC TP103, TP203
S302,305,306	QSL4324-001	Lever Switch	
S303,304	QSL4218-001	"	
T.P.	V04041-1	Test Point	
Clamp	V44691-001	Wire Clamp	



# Meter Control Circuit Board Ass'y

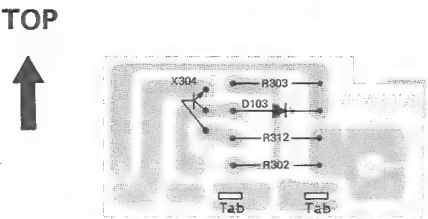


Fig. 52

**Note:** The circuit board assembly will not be available as spare part.

**Transistor**

Ref. No.	Parts No.	Description	Pc	fT
X304	2SC536(F)AUD	Silicon (SANYO)	0.25W	100MHz

**Diode**

Ref. No.	Parts No.	Description
D103	1S188FM	Germanium (SANYO)

**Resistors**

Ref. No.	Parts No.	Parts Name	Description
R302	QRD141K-473	Carbon	47kΩ ¼W
R303	" -472	"	4.7kΩ "
R312	" -104	"	100kΩ "

**Others**

Ref. No.	Parts No.	Parts Name	Description
Tab	V43895-1	Tab	

Power Supply Circuit Board Ass'y

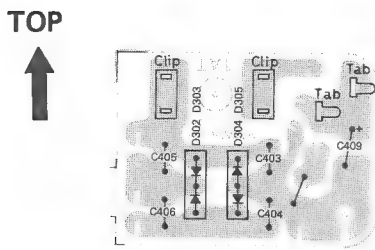


Fig. 53

Note: The circuit board assembly will not be available as spare part.

Diodes

Ref. No.	Parts No.	Description
D302,303	DS131A	Silicon (SANYO) rectifier stack
D304,305	DS132A	

Capacitors

Ref. No.	Parts No.	Parts Name	Description
C403,404,405,406	QCF11EZ-103	Ceramic	0.01μF 25V
C409	QEW41CA-228	Electrolytic	2200μF 16V

Others

Ref. No.	Parts No.	Parts Name	Description
Clip	A44594-001	Fuse Clip	
Tab	V43895-1	Tab	

LED Circuit Board Ass'y



Fig. 54

Note: The circuit board assembly will not be available as spare part.

Diode

Ref. No.	Parts No.	Description
D7	SLP114D	Light Emission (SANYO) Red

# Exploded View of Cassette Mechanism

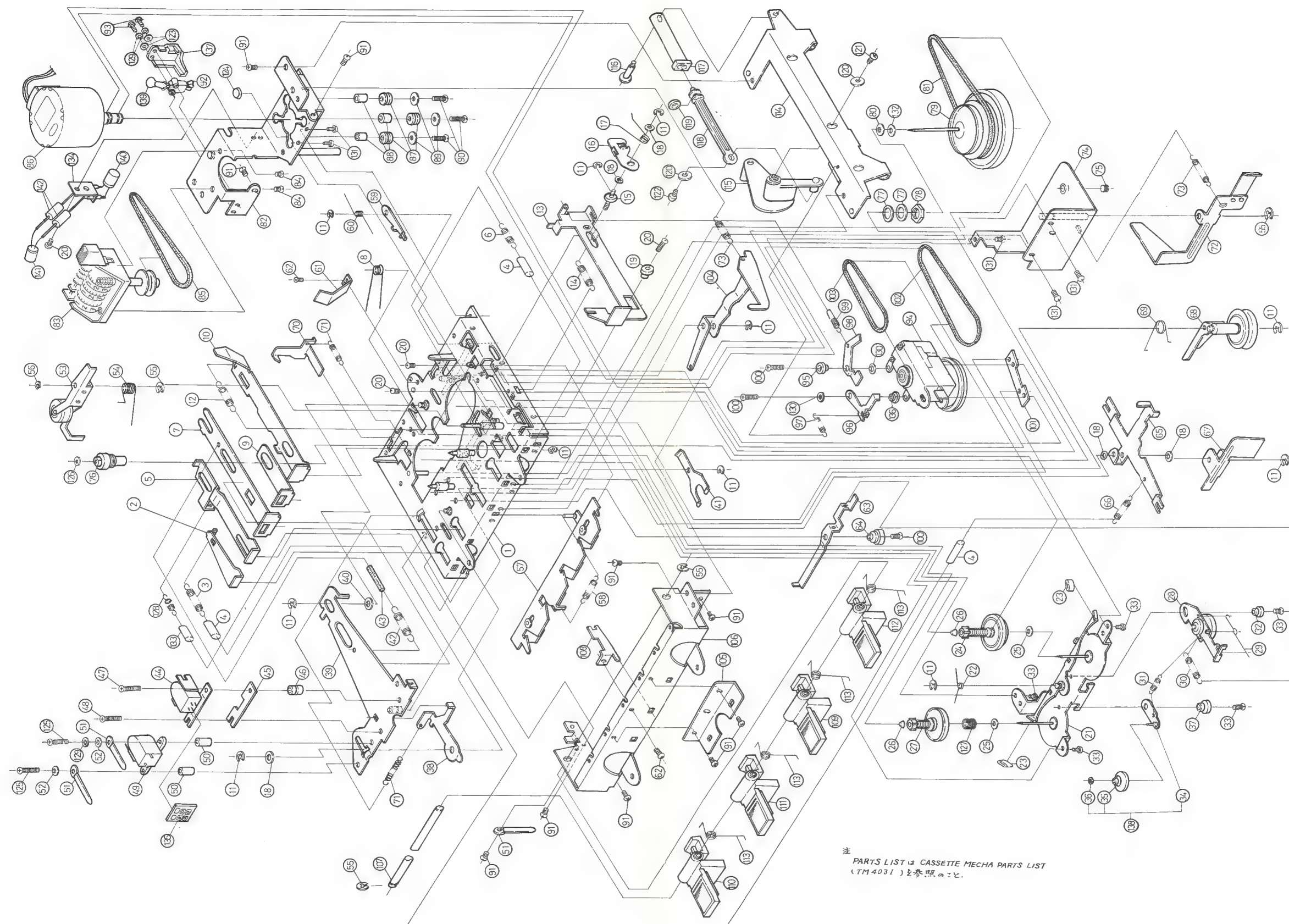


Fig. 55

# List of Cassette Mechanism

Ref. No.	Parts No.	Parts Name	Description	Q'ty
1	*TGB352301-0A	Chassis Ass'y		1
2	*TGB294441-0B	Rewind Bar Ass'y		1
3	T30300-056	Spring	for Rewind Bar	1
4	*QXT636H-008	Vinyl Tube	φ3.6 x l8	3
5	*TGB352408-0A	Record Bar Ass'y		1
6	T30300-140	Spring	for F.F. Lever	1
7	TGB294445-0A	Play Bar Ass'y		1
8	TFW294447-01	Play Bar Spring		1
9	TGB294448-0A	F F Bar Ass'y		1
10	*TGB352410-0A	Stop Bar Ass'y		1
11	REE2500	E-ring		11
12	*T30300-208	Spring	for Stop Bar	1
13	*TGB352412-0A	Pause Bar Ass'y		1
14	T30300-005	Spring	for Pause Bar	1
15	*TFH352415-01	Pause Stud		1
16	*TFB352416-01	Pause Lock Lever		1
17	*TFW352417-01	Lock Lever Spring		1
18	Q03093-430	Washer		5
19	T43909-002	Metal		1
20	LPSP2605Z	Ass'y Screw		4
21	TGB294436-0D	Reel Disk Bracket Ass'y		1
22	TFW336525-01	Brake Spring		1
23	TER265487-01	Brake Rubber		2
24	TGP294462-0C	Take-up Disk Ass'y		1
25	Q03093-609	Washer		2
26	*TEP357437-01	Reel Stopper		2
27	*TGP352454-0A	Supply Disk Ass'y		1
28	TGX294488-0A	F F Arm Ass'y		1
29	*VKW4120-001	F F Spring		1
30	T30300-151	Spring	for F F Arm Ass'y	1
31	T30300-126	Spring	for Rewind Idler Arm	1
32	TFH294492-01	Metal		1
33	SPSP2605Z	Screw		5
34	TGB294510-0A	Rewind Arm Ass'y		1
35	T47500-001	Idler Ass'y		1
36		Poly Slider Washer	φ1 x φ4 x t0.25	1
37	TFH294491-01	Metal		1
38	*TFB352461-01	Record Lock Lever		1
39	*TGB352418-0A	Slide Base Ass'y		1
40	Q03093-819	Washer		1
41	TFP294460-01	Spring Plate		1
42	*VKW3000-011	Spring		1
43	TJN265559-02	Silencer		1
44	THC000487-0B	Play/Record Head		1
45	TFP294513-01	Play/Record Head Spring		1
46	*TFH352422-01	Head Collar		1
47	SPSP2012Z	Screw	for R/P Head	1
48	SPSX2012Z	P.M. Screw	for Azimuth	1
49	V03078-044	Erase Head		1
50	*TFH352422-02	Head Collar		2
51	V42603-003	Wire Clamp		3
52	WNS2000N	Washer		2
53	*TGB352423-0A	Pinch Roller Arm Ass'y		1
54	*TFW352425-01	Pinch Roller Spring		1
55	REE4000	E-ring		4
56	REE2000	E-ring		1
57	*TGB352427-0A	Push Button Cam Ass'y		1
58	T30300-125	Spring	for Push Button Cam	1
59	TFB294512-01	Select Lever		1

Ref. No.	Parts No.	Parts Name	Description	Q'ty
60	TFW294471-01	Spring		1
61	*TFP352430-01	Cassette Spring		1
62	SPSP2604Z	Screw		2
63	*TFB352432-01	Review Lever		1
64	*VKH4102-001	Metal		1
65	*TFB352431-01	Brake Lever		1
66	T30300-056	Spring	for Brake Lever	1
67	*TFB352434-01	Record Lever (A)		1
68	TGP294479-0A	Take-up Lever Ass'y		1
69	TFW294482-02	Lever Spring		1
70	*TFB352433-01	Record Safety Lever		1
71	T30300-121	Spring		2
72	*TGB352435-0A	Record Lever Ass'y		1
73	T30300-136	Spring	for Record Lever B	2
74	*TGB352438-0A	Flywheel Holder Ass'y		1
75	TEP265498-01	Thrust Screw		1
76	*TFH352420-0A	Capstan Metal Ass'y		1
77	T47829-001	Washer		2
78	T47828-001	Nut		1
79	*TGD352302-0A	Flywheel Ass'y		1
80	Q03093-829	Washer	for Thrust	1
81	*TEB352441-01	Capstan Belt		1
82	*TGB352442-0A	M.C Bracket Ass'y		1
83	*V31093-003	Tape Counter		1
84	SSSP3006ZS	Screw		2
85	*TEB352444-01	Counter Belt		1
86	*MHi5F2CRY	Motor Ass'y		1
87	T45687-001	Rubber Cushion		3
88	T30302-058	Collar		3
89	Q03091-154	Washer		3
90	SPSP2608Z	Screw		3
91	SPSD2605Z	TH. Tap. Screw		10
92	*VSM1106-001	Main Switch		1
93	SPSP2014Z	Screw	for Main Switch	2
94	*V31164-001	Shut-off Ass'y		1
95	*TFH352445-01	Metal		1
96	*TFB352446-01	Kick Lever		1
97	*T30300-170	Spring	for Kick Lever	1
98	*TFB352447-01	Stop Lever		1
99	*TFW352460-01	Spring	for Stop Lever	1
100	LPSP2608Z	Ass'y Screw		3
101	*TFB352448-01	Bracket		1
102	*VKB3000-005H	Shut-off Belt		1
103	*VKB3000-002H	Belt		1
104	*TFB352450-01	Stop Arm		1
105	*TFB352459-01	Button Bracket		1
106	*TFB352304-01	Push Button Frame		1
107	*TFH352451-01	Push Button Shaft		1
108	*VKL4104-001	Frame Bracket		1
109	*TJB352307-01	Push Button	CUE	1
110	*TJB352305-01	Push Button	PLAY, REVIEW, PAUSE	3
111	*TJB352305-02	Push Button	REC	1
112	*TJB352305-03	Push Button	STOP/EJECT	1
113	*TFW352453-01	Push Button Spring		6
114	*TFB352306-01	Amp. Bracket		1
115	*V45028-001	Arm Holder		1
116	V42583-006	Stud		1
117	V44830-00A	Brake Pipe Ass'y		1
118	V44808-001	Brake Shaft		1

— Continued on page 38 —



# Exploded View of Amplifier Ass'y

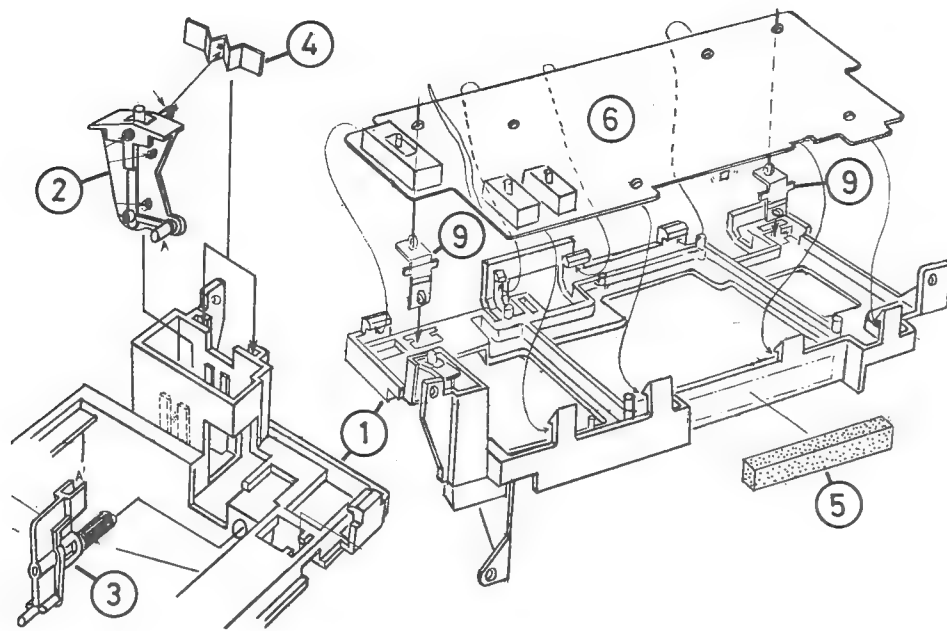


Fig. 56

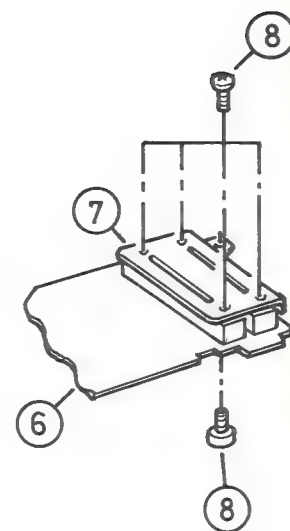


Fig. 57

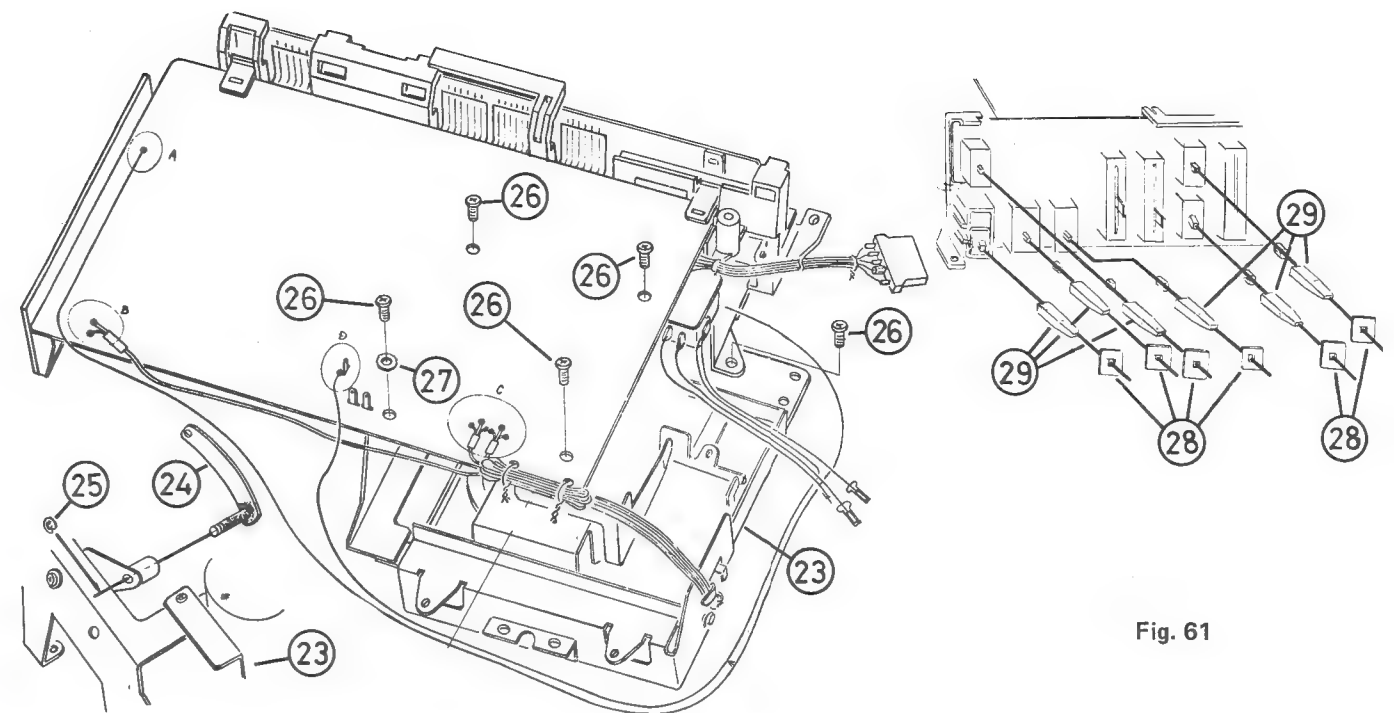


Fig. 60

Fig. 61

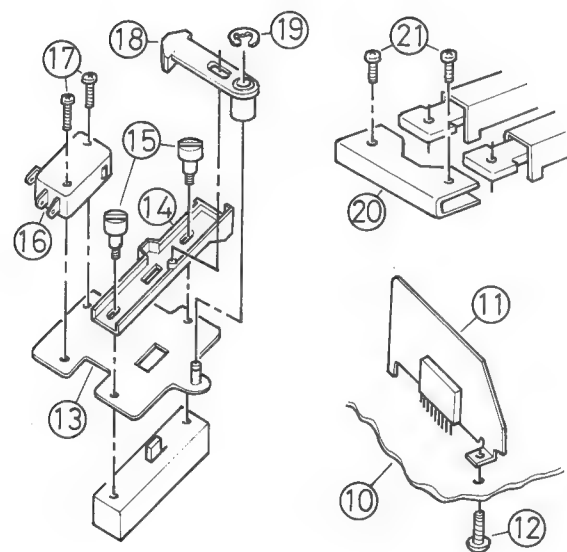


Fig. 58

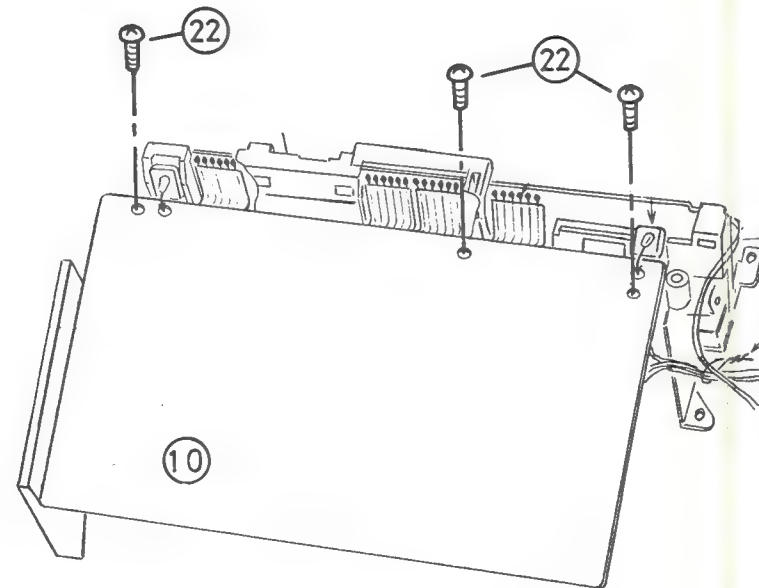


Fig. 59

Asterisked parts (\*) show new parts.

Ref. No.	Parts No.	Parts Name	Description	Q'ty
1	*V10344-1	Control Chassis	Glued Control	1
2	*V31148-001	Toggle Lever		1
3	*V44968-001	Toggle Connector		1
4	*V45037-002	Spring		1
5	VYSH105-017	Spacer		1
6	*	Circuit Board Ass'y	Amplifier	1
7	*V44971-001	Bracket		1
8	SPSP3004ZS	Screw		5
9	*V44967-001	Hinge		2
10	*	Circuit Board Ass'y		1
11	*V44970-001	Radiation Plate		2
12	SBSB3010Z	Screw		6
13	*VYH4152-00A	Plate		1
14	*V44969-003	Slider		1
15	V42583-2	Stud		2
16	QSM1V11-102	Micro Switch		1
17	SPSP3012ZS	Screw		2
18	*VYH4154-001	Arm		1
19	REE2000	E-ring		1
20	TFB336401-01	Switch Connector		1
21	SPSP2008Z	Screw		2
22	SBSB3010Z	"		3
23	*	Cassette Mechanism		1
24	*V45027-00A	Cassette Door Arm Ass'y		1
25	REE2000	E-ring		1
26	SPSP3008ZS	Screw		5
27	WBS3000N	Toothed Lock Washer		1
28	*V45041-001	Dust Cover		6
29	*V44979-001	Lever Cap		6

# Exploded View of Tuner Ass'y

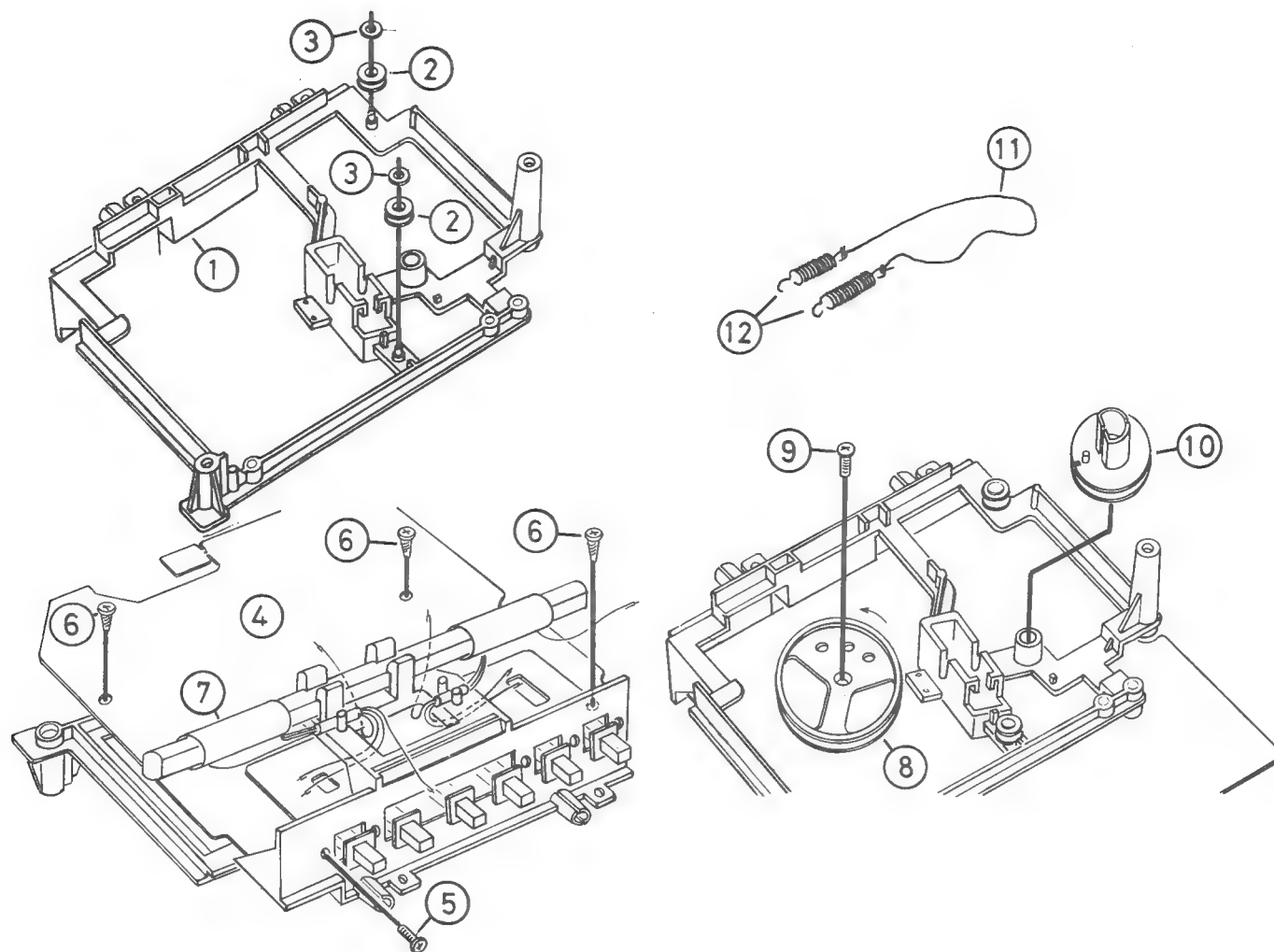


Fig. 62

Asterisked parts (\*) show new parts.

Ref. No.	Parts No.	Parts Name	Description	Q'ty
1	*V10338-003	Chassis	Tuner	1
2	VYH4002-001	Roller		2
3	V42562-1	Special Washer		2
4	*	Circuit Board Ass'y	L8, 9	1
5	SDSP3008ZS	Screw		1
6	SBSB3008Z	"		3
7	*VQB016B-204	Bar Antenna Ass'y		1
8	*QZD1108-002N	Dial Drum		1
9	SSSP2608Z	Screw		1
10	*VYH3103-001	Dial Drum		1
11	VHR2TK9-05AT	Dial Cord		1
12	50153-3	Spring		2

# Exploded View of Power Supply Ass'y

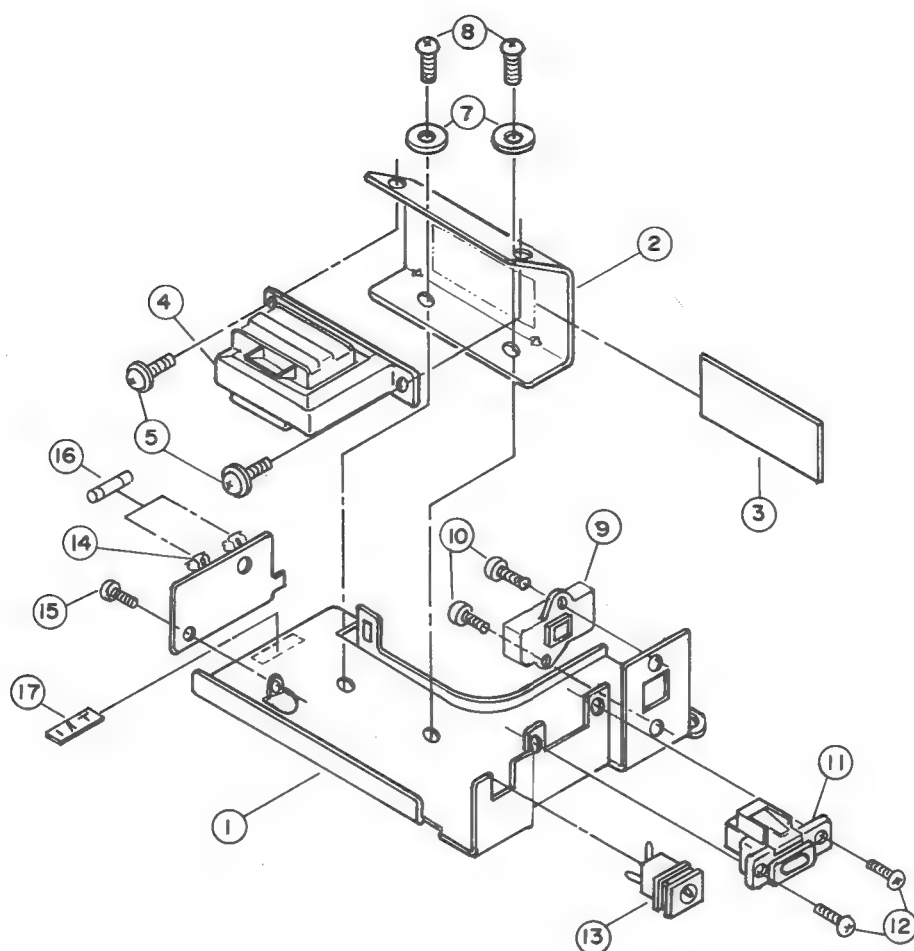


Fig. 63

Arsterisked parts (\*) show new parts.

Ref. No.	Parts No.	Parts Name	Description	Q'ty
1	*V31141-005	Transformer Bracket		1
2	*VYH4176-001	Bracket		1
3	*VYSP1R5-019	Spacer	Glued	1
4	VTP54N2-12A	Power Transformer	T101	1
5	DPSP4008ZS	Ass'y Screw		2
6			Blank No.	
7	Q03091-110	Washer		2
8	SBSB4010Z	Screw		2
9	QSS2325-005	Slide Switch	S313	1
10	SPSP3006ZS	Screw		2
11	QMC0263-001	AC Socket Ass'y		1
12	SBSB2606Z	Screw		2
13	QMA1221-001	DC Jack Ass'y	J303	1
14	* _____	Circuit Board Ass'y	Power Supply	1
15	SBSB3006Z	Screw		1
16	QMF51A2-1R0	Fuse	1AT	1
17	V42816-007	Fuse Label	Glued	1

# Exploded View of Front Cabinet (1)

Asterisked parts (\*) show new parts.

Ref. No.	Parts No.	Parts Name	Description	Q'ty
1~20	*ZCRC828L-CBF	Front Cabinet Ass'y		1
1	*V10343-003	Front Cabinet		1
2	*V44946-002	Contact		1
3	SDSP3006ZS	Screw		1
4	*V20697-002	Control Panel	Glued	1
5	*V44936-001	Plate (A)	"	1
6	*V44937-001	" (B)	"	1
7	*V44938-001	Dust Pad (A)	"	2
8	*V44939-001	" (B)	"	1
9	*V44945-001	Plate	"	1
10	*V20699-001	Dial Lens	"	1
11	VYSH107-005	Spacer	"	6
12	*V20700-001	Dial Escutcheon	"	1
13	*V44940-001	Microphone Plate	"	2
14	QXM2251-001	Mark	"	1
15	*V44957-001	Reflection Plate	"	1
16	*V44941-001	Fitting	"	1
17	*VJD4001-001	Plate	"	1
18	47115-042	Saran Net	"	2
19	*V44958-00A	Speaker Grill		2
20	*V44960-001	Punching Panel	Glued	2
21	*VYTA406-001	Spacer		1
22	*V44961-001	Knob Ring		1
23	*V44975-001	Spring		1
24	SBSB2606Z	Screw		1
25	*V45025-001	Protector		1
26	Q03091-138	Washer		2
27	NNB3000S	Nut		2
28~29	*ZERC828-CCA	Cassette Door Ass'y		1
28	*V31145-00A	Cassette Door Sub Ass'y		1
29	*V31146-001	Cassette Plate	Glued	1
30	E48729-004	Plastic Rivet		1
31	*V44932-001	Head Cover		1
32	*V44955-001	Plate	Glued	1

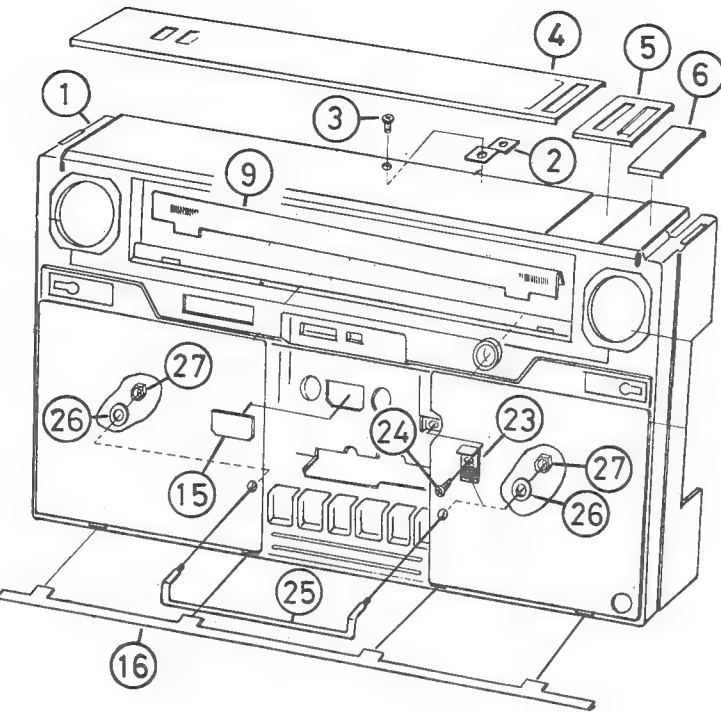


Fig. 64

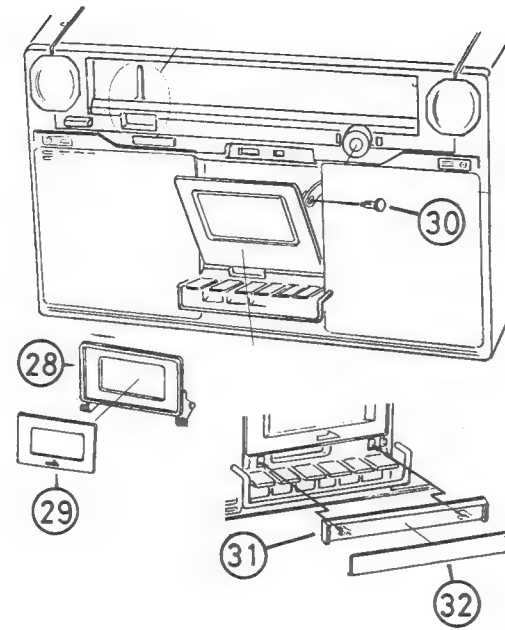


Fig. 65

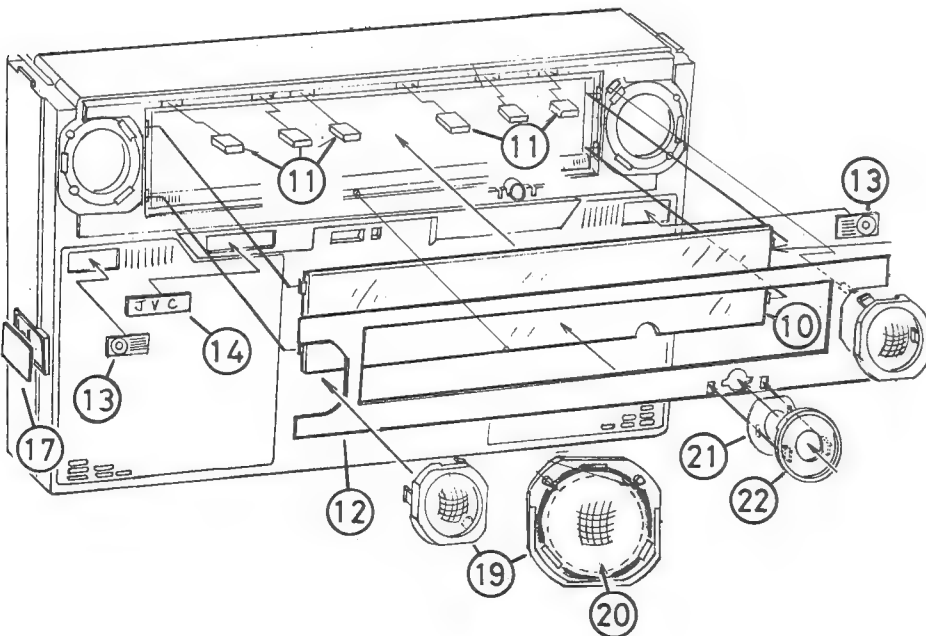


Fig. 66

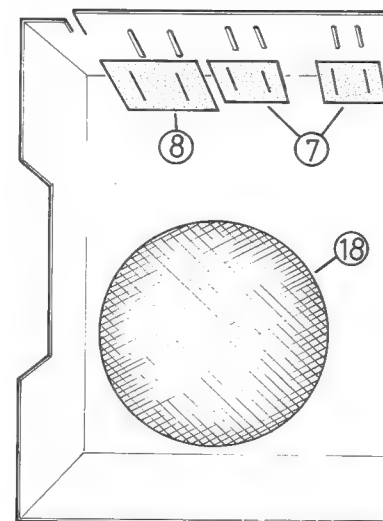


Fig. 67



## Exploded View of Front Cabinet (2)

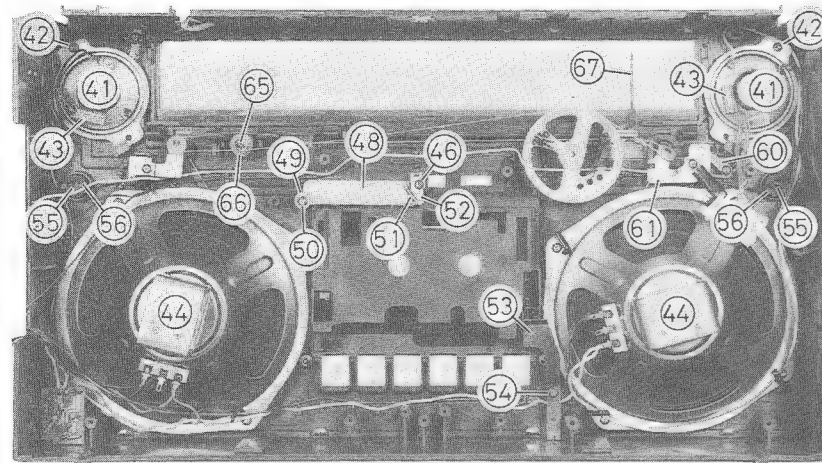


Fig. 68

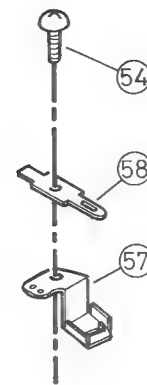


Fig. 69

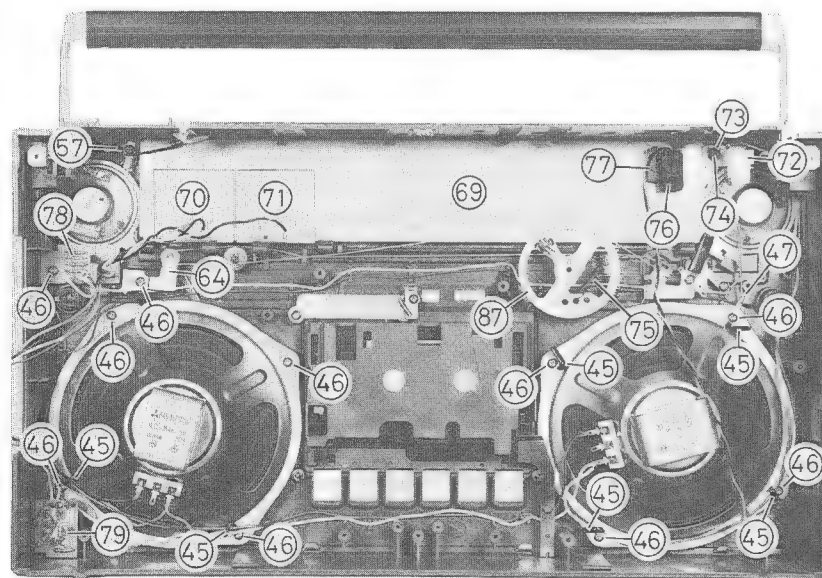


Fig. 70

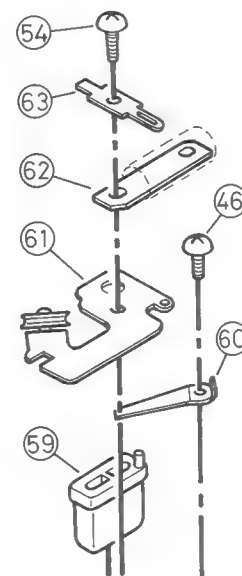


Fig. 71

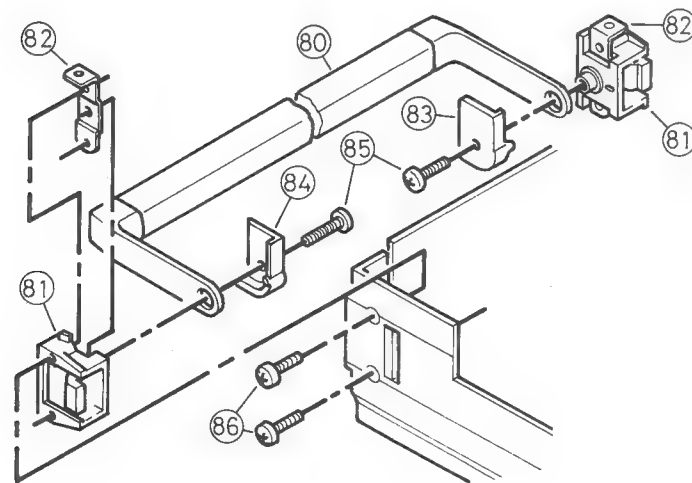


Fig. 72

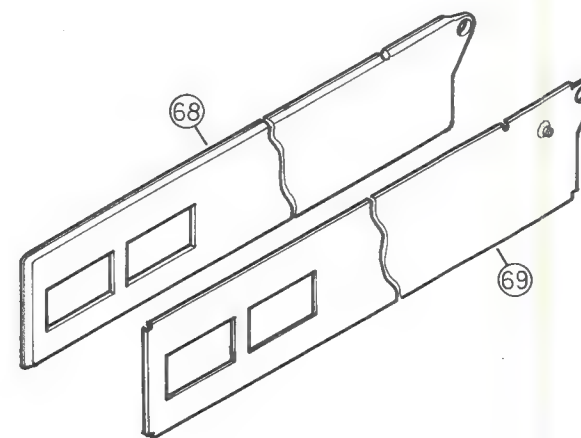


Fig. 73

No. 1344

Asterisked parts (\*) show new parts.

Ref. No.	Parts No.	Parts Name	Description	Q'ty
41	*EAS5PH50SG	Speaker	Tweeter	2
42	SBSB3006Z	Screw		2
43	QEN21EM-335	Non-polarized Electrolytic Capacitor	C159,259 (3.3μF, 25V)	2
44	EAS16P111SD	Speaker	Woofer	2
45	V42603-003	Wire Clamp		6
46	SBSB3008Z	Screw		12
47	50242-3	Lug		1
48	*V31165-002	Eject Lever		1
49	Q03091-105	Washer		1
50	SBSB3012Z	Screw		1
51	T30300-194	Spring		1
52	*V44962-001	Eject Lever Holder		1
53	*V44953-001	Cassette Spring		1
54	SBSB3010Z	Screw		3
55	VMME62N-004	Condenser Microphone		2
56	V44886-001	Microphone Bushing		2
57	*V44981-001	Earth Catcher		1
58	V41208-003	Tab		1
59	*V44949-001	Check Light Button		1
60	V41299-006	Contact		1
61	*V44950-00B	Roller Bracket Ass'y		1
62	V44196-002	Rod Antenna Holder		1
63	V41208-003	Tab		1
64	*V44950-00C	Roller Bracket Ass'y		1
65	*VYH4159-00A	Tuning Shaft Ass'y		1
66	*VYH4149-002	Nut		1
67	*V44964-001	Needle		1
68	*V20698-002	Dial Scale		1
69	*V20702-001	Dial Back Plate		1
70	*V03020-060	Indicator		1
71	*V03020-059	"		1
72	*V31167-002	Switch Holder		1
73	53492-002	Rubber Bushing		1
74	QLP3101-331	Lamp		1
75	50153-3	Spring		1
76	*	Circuit Board Ass'y	LED	1
77	*V44901-002	Spacer		1
78	*	Circuit Board Ass'y	Meter Control	1
79	*	"	Headphone	1
80	*V44348-00J	Handle		1
81	V31131-001	Handle Supporter		2
82	V44883-001	Bracket		2
83	*V44943-001	Washer (L)		1
84	*V44944-001	" (R)		1
85	SPSP3014ZS	Screw		2
86	SDSP3018RS	"		4
87	*V44930-001	Tuning Drum		1

# Exploded View of Rear Cabinet

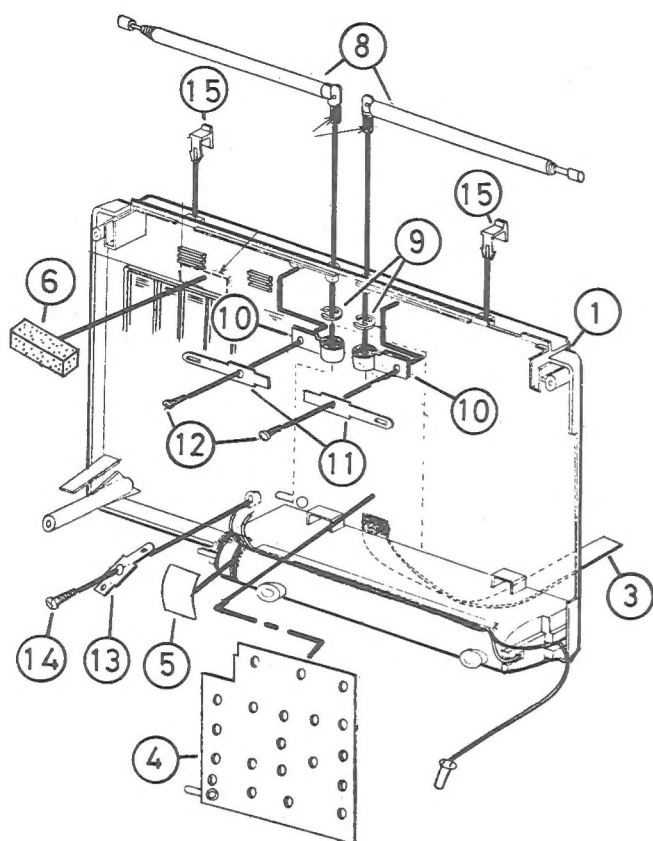


Fig. 74

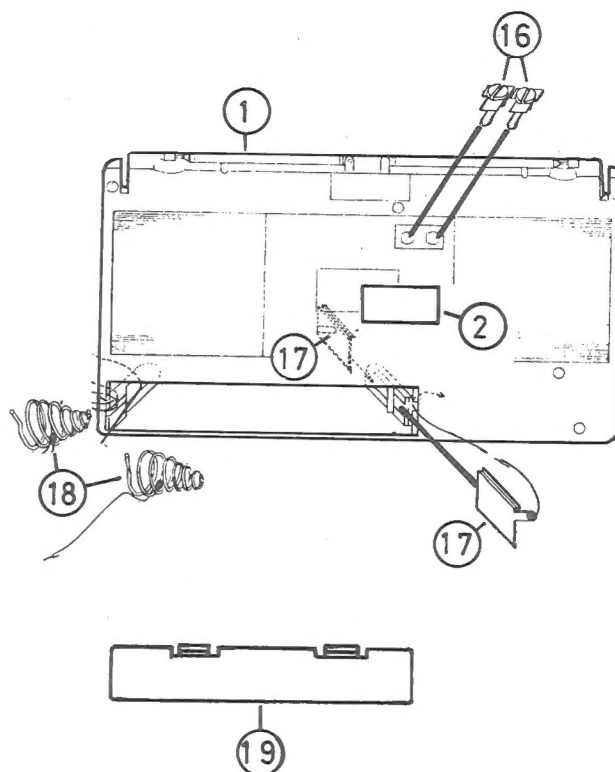


Fig. 75

Asterisked parts (\*) show new parts.

Ref. No.	Parts No.	Parts Name	Description	Q'ty
1~6	*ZCRC828L-CBR	Rear Cabinet Ass'y		1
1	*V10345-001	Rear Cabinet		1
2	*VYN5034-002CA	Name Plate	Glued	1
3	V41583-3	Tape	"	1
4	*V44948-00A	Shield	"	1
5	VYSA1R3-013	Spacer	"	1
6	*VYSH110-014	"	"	1
7			Blank No.	
8	QZR4147-001U	Rod Antenna		2
9	REE6000	E-ring		2
10	V50029-2	Rod Antenna Holder		2
11	V41208-003	Tab		2
12	SPSP2606Z	Screw		2
13	V41208-003	Tab		1
14	SBSB3006Z	Screw		1
15	V44618-002	Antenna Retainer	Force-fitted	2
16	V44814-00B	Terminal Ass'y	"	2
17	T41240-003	Battery Contact	"	2
18	53738-1	Spring	"	2
19	*ZCRC828-BCA	Battery Cover Ass'y		1

## Final Packing Ass'y

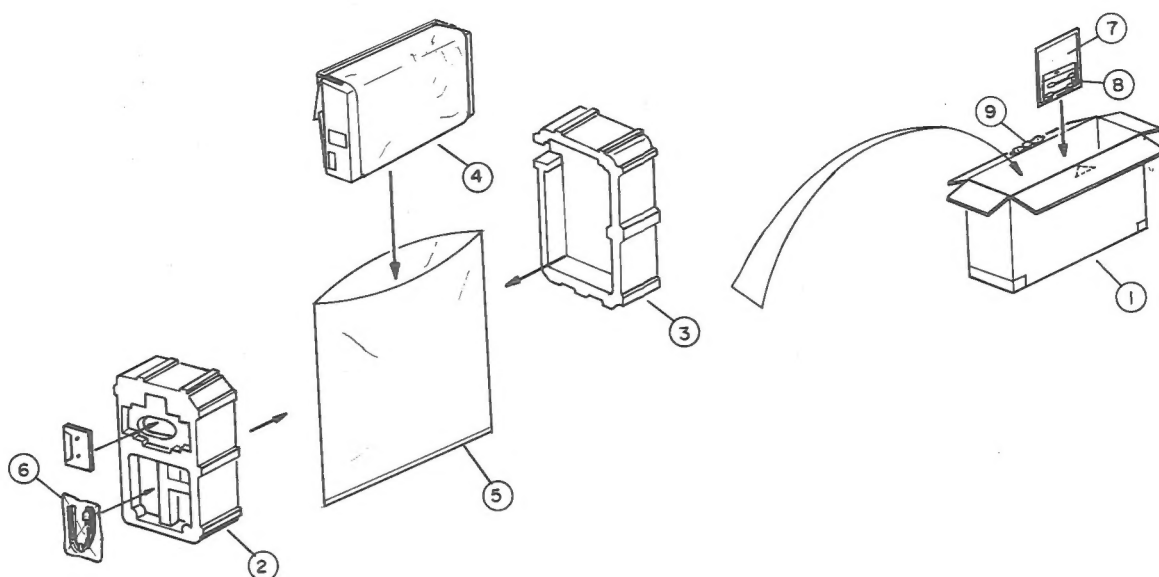


Fig. 76

Ref. No.	Parts No.	Parts Name	Description	Q'ty
1	*VPA3002-002	Carton Case		1
2	VP1618-001	Side Cushion (L)		1
3	*VPH1114-001	" (R)		1
4	VHPJ109-039	Wrapping Paper		1
5	QPGA065-05005	Polyethylen Bag		1
6	QPGA012-01505	"	for Power Cord	1
7	QPGB024-03404	"	for Instruction Book	1
8	QPGA012-01505	"	for Head Cleaning Stick	1
9	QPSC100-001	Curl Stopper		1

## Accessories

Parts No.	Parts Name	Description	Q'ty
QMP3950-183	Power Cord		1
V43338-1	Head Cleaning Stick		2
VGT12S3-J01	Cassette Tape		1
*VNM0669-002	Instruction Book		1
VNC6301-001	Trouble Shooting Chart		1
*VNF0669-001	Feature Sticker		1
*VNC6303-002	Narration Card	for Cassette Tape	1
TLT000429-01	Caution Card	for Head Cleaning Stick	1
*VNC5501-001	BIPHONIC Tag		1



# Difference of Model RC-828LB

Difference between RC-828LB and RC-828L is the power supply section.

## Wiring Connection

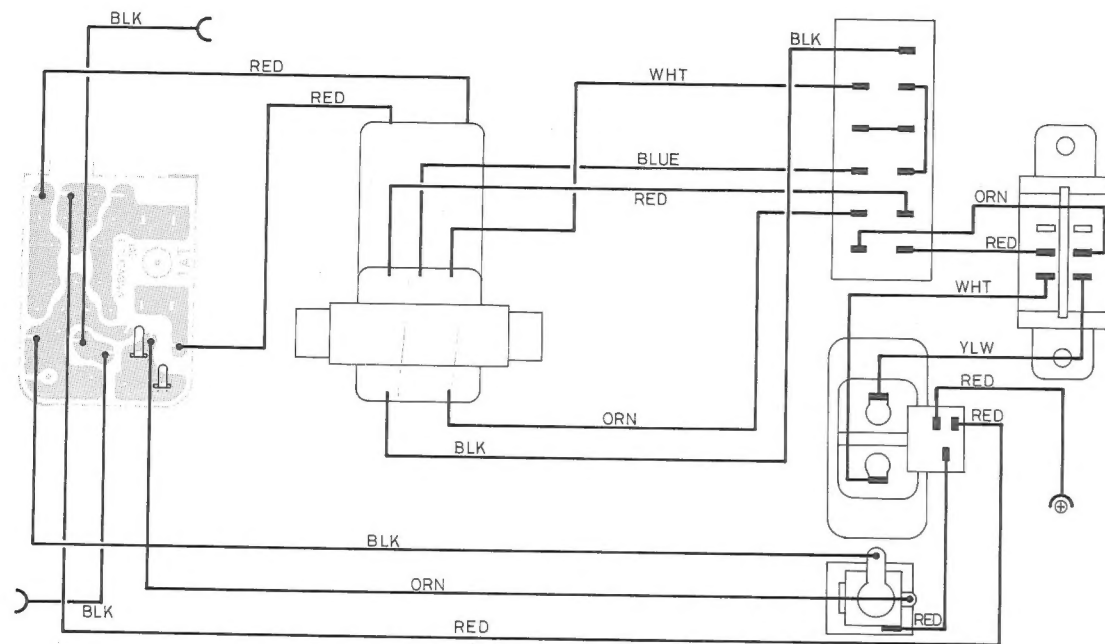


Fig. 77

## Exploded View of Power Supply Ass'y

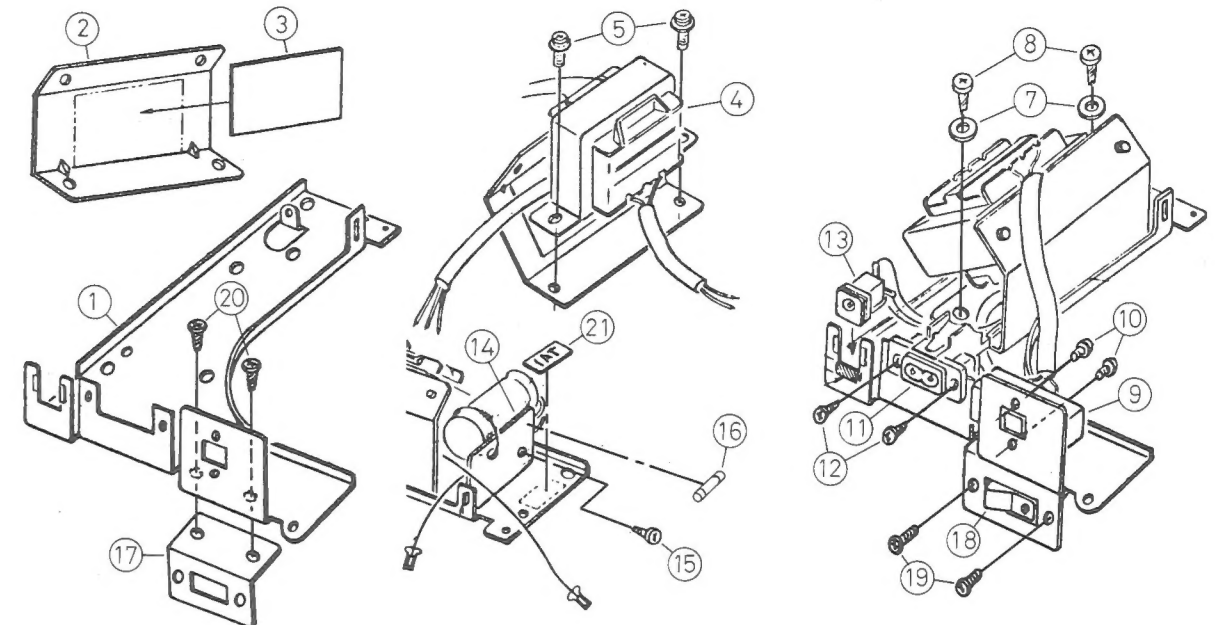


Fig. 78

Asterisked parts (\*) show new parts.

Ref. No.	Parts No.	Parts Name	Description	Q'ty
1	*V31141-005	Transformer Bracket		1
2	*VYH4176-001	Bracket		1
3	*VYSP1R5-019	Spacer		1
4	VTP54N2-12A	Power Transformer	△ T101	1
5	DPSP4008ZS	Ass'y Screw		2
6			Blank No.	
7	Q03091-110	Washer		2
8	SBSB4010Z	Screw		2
9	QSS2325-005	Slide Switch	△ S313	1
10	SPSP3006ZS	Screw		2
11	QMC0263-001	AC Socket Ass'y		1
12	SBSB2608Z	Screw		2
13	QMA1221-001	DC Jack Ass'y	J303	1
14	*	Circuit Board Ass'y	Power Supply	1
15	SBSB3006ZS	Screw		1
16	QMF51A2-1R0	Fuse	△ 1AT	1
17	*VYH4171-001	Bracket		1
18	*QSE2235-204	See Saw Switch	△ S311	1
19	SDBP3006BS	Screw		2
20	SBSB3005Z	"		2
21	V42816-007	Fuse Label	Glued	1

Note: The parts marked △ in the Description column are critical components for safety.  
Use the specified parts, when replacing the critical components, never use equivalent parts.

## Exploded View of Front Cabinet (1) (Refer to page 33.)

Asterisked parts (\*) show new parts.

Ref. No.	Parts No.	Parts Name	Description	Q'ty
1~20	*ZCRC828LB-CBF	Front Cabinet Ass'y		1
1	*V10343-002	Front Cabinet Ass'y		1
2	*V44946-002	Contact		1
3	SDSP3006ZS	Screw		1
4	*V20697-002	Control Panel	Glued	1
5	*V44936-001	Plate (A)	"	1
6	*V44937-001	" (B)	"	1
7	*V44938-001	Dust Pad (A)	"	2
8	*V44939-001	" (B)	"	1
9	*V44945-001	Plate	"	1
10	*V20699-001	Dial Lens	"	1
11	VYSH107-005	Spacer	"	6
12	*V20700-001	Dial Escutcheon	"	1
13	*V44940-001	Microphone Plate	"	2
14	QXM2251-001	Mark	"	1
15	*V44957-001	Reflection Plate	"	1
16	*V44941-001	Fitting	"	1
17			Blank No.	
18	47115-042	Saran Net	Glued	2
19	*V44958-00A	Speaker Grill		2
20	*V44960-001	Punching Panel	Glued	2

## Final Packing Ass'y (Refer to page 36)

Ref. No.	Parts No.	Parts Name	Description	Q'ty
1	*VPA3002-013	Carton Case		1
2	VP1618-001	Side Cushion (L)		1
3	*VPH1114-001	" (R)		1
4	VHPJ109-039	Wrapping Paper		1
5	QPGA065-05005	Polyethylen Bag		1
6	QPGA012-02505	"	for Power Cord	1
7	QPGB024-03404	"	for Instruction Book	1
8	QPGA012-01505	"	for Head Cleaning Stick	1
9	QPSC100-001	Curl Stopper		1

## Accessories

Asterisked parts (\*) show new parts.

Parts No.	Parts Name	Description	Q'ty
QMP9017-006	Power Cord	△ (Critical Component)	1
V43338-1	Head Cleaning Stick		2
VGT12S3-J01	Cassette Tape		1
*VNM0669-001	Instruction Book		1
VNC6301-001	Trouble Shooting Chart		1
*VNF0669-001	Feature Sticker		1
*VNC6303-001	Narration Card	for Cassette Tape	1
TLT000429-01	Caution Card	for Head Cleaning Stick	1
OZL1002-003	Warning Label	for Power Cord	1

## Exploded View of Rear Cabinet (Refer to page 35.)

Asterisked parts (\*) show new parts.

Ref. No.	Parts No.	Parts Name	Description	Q'ty
1~7	*ZCRC828LB-CBR	Rear Cabinet Ass'y		1
1	*V10345-001	Rear Cabinet		1
2	*VYN5034-006CA	Name Plate	Glued	1
3	V41583-3	Tape	"	1
4	*V44948-00A	Shield	"	1
5	VYSA1R3-013	Spacer	"	1
6	*VYSH110-014	"	"	1
7	VYSA1R4-041	"	"	2

— Continued from page 29 —

Ref. No.	Parts No.	Parts Name	Description	Q'ty
119	TER267508-02	"O" Ring		1
120	Q03091-105	Washer		2
121	SBSB3010Z	Tap. Screw		1
122	SBSB3005Z	Tap Screw		1
123	WNB2000N	Washer		2
124	TER313570-01	Motor Cushion		1
125	SPSP2014Z	Screw		2
126	031503T	Washer	for Oil Stopper	1
127	T30301-103	Spring	for Back Tension	1
128	T30300-049	Spring	for Record Bar	1
129	WLS2000	Lock Washer		3
130	*VKL4105-001	Washer		2
131	SPSP2606Z	Screw		5
132	Q03093-830	Washer	φ2.1 x φ4 x t0.25	1
133	*QXT646H-015	Vinyl Tube	φ4.5 x ℓ15	1
134	V03082-2	Feedthru	C401, C402	1
135	*VMW3035-501	Printed Circuit Board	R/P Head	1
136	*TFH352445-02	Metal		1
137	*VKS3101-001	Switch Cover		1
138	TGX294490-0A	Rewind Idler Arm Ass'y		1
139	QCF11EZ-223	Ceramic Capacitor	C407 (0.022μF, 25V)	1
140	QEW41CA-227	Electrolytic Capacitor	C408 (220μF, 16V)	1
141	QEW41CA-107	Electrolytic Capacitor	C410 (100μF, 16V)	1
142	*03226-025	Inductor	L401, L402	2